

**Statement of Nancy Messonnier, MD
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U.S. Department of Health and Human Services**

**House Committee on Energy and Commerce,
Subcommittee on Oversight and Investigations
U.S. House of Representatives**

Good morning Chairwoman DeGette, Ranking Member Guthrie, and Members of the Subcommittee. I am Dr. Nancy Messonnier, Director of the National Center for Immunization and Respiratory Diseases at the Centers for Disease Control and Prevention (CDC). Thank you for the opportunity to speak with you today. CDC works collaboratively with our colleagues in other components of the Department of Health and Human Services to protect the nation's health. CDC is committed to conducting critical science, providing health information, and acting quickly to protect our nation through the control and prevention of disease, injury, and disability in the United States and globally.

Vaccines are one of public health's greatest achievements. The immunization of children in the United States (U.S.) has saved millions of lives, contributed to longer life expectancy, reduced health disparities, improved quality of life, and saved trillions of dollars in societal costs. Immunizations have become a routine part of how we care for our children, but there is more we can do to get the most benefit from this lifesaving technology, especially in regard to influenza. To protect the lives of more Americans from vaccine-preventable diseases we must continue to strengthen public trust in vaccines to further improve vaccination coverage. As we look to the upcoming flu season, we know that we have more work to do to increase the number of Americans receiving their influenza vaccination and the effectiveness of the flu vaccine.

Influenza viruses typically circulate in the United States annually, most commonly from late fall through early spring. Influenza can result in serious illness, hospitalization, and death, particularly among older adults, very young children, pregnant women, and people with certain chronic medical conditions, such as asthma, heart disease or diabetes. Influenza illness also is an important cause of missed work and school. Any flu infection can carry a risk of serious complications, hospitalization or death, even

among otherwise healthy children and adults. The recent 2017-2018 influenza season was particularly severe, causing thousands of flu-related deaths, including 186 children. The 2018-2019 season, though less severe, was record breaking in length at 21 weeks of elevated influenza activity. Influenza pandemics, which are global outbreaks of a new influenza virus, occur less frequently than seasonal epidemics, but their impacts can be even more devastating and result in millions of deaths around the globe. The 2019-2020 flu season has officially begun. National levels of influenza-like-illness have been increasing for nearly a month, however, the amount of illness still varies by region. The south and parts of the west are seeing elevated activity while other parts of the country are still seeing low activity. CDC is actively monitoring the viruses that are circulating, but it is too early to tell which viruses will predominate, or how severe the season will be. Even in seasons when the flu vaccine is less protective against the predominantly circulating strains, vaccination still reduces risk of hospitalization and death. Vaccination is the single best way for Americans to protect themselves.

CDC recommends a yearly flu vaccine for everyone 6 months of age and older as the first and most important step in protecting against this potentially serious disease. Vaccination is especially important for people at high risk of developing flu complications, and their close contacts. Influenza vaccine is very safe. Over 150 million doses of influenza vaccine are distributed each year, and CDC monitors the safety of the vaccine each and every season. During the 2018-2019 flu season, 169 million doses of influenza were distributed, with less than .01 percent of those receiving a vaccine reporting a potential adverse event associated with the vaccine. Injection site reactions were the most common type of adverse event reported. This week is National Influenza Vaccination Week, a time when CDC and our partners remind Americans that it is not too late to get a flu vaccine. As long as flu viruses are spreading and causing illness, health professionals should continue to vaccinate in order to protect as many people as possible against flu. I would like to take this opportunity to personally remind each of you to protect yourselves and your family members by getting get your annual flu vaccination.

In addition to getting a seasonal flu vaccine, you can take everyday preventive actions like staying away from sick people and washing your hands to reduce the spread of germs. If you are sick with flu, stay home from work or school to prevent spreading it to others. Prescription antiviral drugs can

be used to treat flu illness. Antiviral treatment works best when started soon after flu illness begins. When treatment is started within two days of becoming sick with flu symptoms, antiviral drugs can lessen fever and symptoms, and shorten the time you are sick by about one day. They also may reduce the risk of complications such as ear infections in children, respiratory complications requiring antibiotics, and hospitalization in adults.

CDC estimates show that flu vaccination coverage has increased over the past decade, though the increase has been more impressive in children. Vaccination among kids across all ages, 6 months through 17 years, was almost 63 percent for the 2018-2019 flu season—an increase of almost 5 percentage points from the previous season. While this is an improvement, flu vaccination coverage among children remains lower than coverage for other childhood vaccinations. A recent national study found that the most common reasons parents reported for not having their child vaccinated against influenza are concern about side-effects/safety, belief that the flu vaccine does not work well, and belief that their child is unlikely to get very sick from influenza. Influenza vaccination coverage among adults is around 45 percent, leaving more than half of adult Americans unprotected from flu each season. Although women with influenza are more than twice as likely to be hospitalized if they are pregnant, only 1 in 3 U.S. pregnant women receive both the recommended influenza (flu) and whooping cough vaccines. Despite overwhelming and consistent scientific evidence that flu vaccines are safe and effective, it is clear that continued efforts to educate providers and the general public are still needed.

CDC, and other components of the Department of Health and Human Services (HHS), including the National Institutes of Health (NIH), Food and Drug Administration (FDA), and Biomedical Advanced Research and Development Authority (BARDA), are working together to use cutting edge science to make influenza vaccines better. This is a complicated, multi-year process that must be both stepwise and iterative. Under the recently announced Executive Order to modernize influenza vaccines, CDC will work with our other federal partners to help improve vaccine manufacturing and effectiveness. Influenza vaccines are vitally important to disease prevention, and the current production methods can be improved.

CDC has a central role in every part of the seasonal influenza vaccine development and administration cycle. The resulting data are used to provide feedback and inform policy and recommendations for new and better vaccines. CDC is the global leader in tracking and studying influenza disease and flu viruses. We have some of the world's very best scientists working on flu 24/7, and have used innovative surveillance, diagnostic, and sequencing approaches to dramatically advance what we know. However, influenza viruses are incredibly difficult to track because they constantly change. These changes are why we select new vaccine strains every year and they are also why new flu strains can emerge and lead to devastating pandemics. CDC believes that long-lasting, broadly protective "universal" vaccines are the ultimate goal for flu prevention. We are still years away from having a universal vaccine. The good news is that we think that, in the much-nearer future, we can protect millions of Americans from the flu by making incremental improvements to vaccines. These changes can be made using production platforms already available and by improving the immunization infrastructure necessary to get more Americans vaccinated each flu season.

Over the last decade, CDC has significantly improved worldwide surveillance and characterization of influenza viruses in support of more effective vaccines. Globally coordinated epidemiologic and virologic surveillance is the foundation of the influenza vaccine virus selection and development process. CDC serves as one of six World Health Organization (WHO) Collaborating Centers that receive and characterize thousands of influenza viruses each year and support core influenza staff at the WHO. CDC contributes a large amount of virus characterization and genomic sequencing data for both the U.S. and global viruses and is an innovator in new methods for the strain selection process. This process involves working across the United States and with countries all around the world to characterize many thousands of influenza viruses, which are used to inform vaccine strain selection and to develop the vaccines. CDC partnerships with more than 50 Ministries of Health and other health agencies have strengthened global influenza surveillance and created the capacities to analyze and characterize flu viruses more quickly and to increase the number of candidate vaccine viruses.

We develop diagnostic assays for public health laboratories in the United States and globally, and through our International Reagent Resource, we ship them around the world to help stop the spread of flu at its source. CDC continues to increase our ability to sequence viruses around the world – we use next generation sequencing to gather and analyze genomic data and share those data with other stakeholders. Genomic data help us make better decisions about what goes in each year's flu vaccine, and also help us evaluate viruses for their pandemic potential. We would like to be able to move completely to a domestic and global flu surveillance model that is "sequence-first," a method that uses Next Generation Sequencing (NGS) for all specimens sent to CDC for virologic surveillance. Next Generation Sequencing reveals the genetic variation among different virus particles in a single specimen and allows public health laboratorians to confirm the genetic identity of circulating viruses. These sequence data are also now a vital component of the twice-yearly WHO influenza vaccine virus strain selection process and are used in molecular modeling and forecasting. As the cost of Next Generation Sequencing drops and the availability of more rapid sequencing platforms increases, this technique may begin to serve as a routine approach for influenza virologic surveillance.

Additionally, CDC has developed and deployed a mobile mini-lab that can be carried on a plane, set up in remote, resource-limited settings to process and test specimens, and send the genomic data up to a cloud platform for further analysis and action. What was once a room full of equipment is now a device that can fit in the palm of your hand. Particularly in an outbreak setting, we can even more rapidly characterize viruses and improve detection of influenza viruses with pandemic potential. CDC can use this technology to detect other pathogens beyond flu, making it a valuable tool in resource challenged outbreak settings.

CDC has developed and maintains one of the nation's systems for monitoring the effectiveness of influenza vaccines, the U.S. Vaccine Effectiveness Network (U.S. VE Network). The U.S. VE Network currently consists of five study sites across the United States that measure the flu vaccine's effectiveness in reducing outpatient medical visits due to laboratory-confirmed influenza. This system provides critical information for manufacturers and researchers in developing enhanced vaccines by collecting more specific data about how well the vaccine works each season. Data collected through the network are instrumental in making recommendations for vaccine use, selection of new virus strains for updating

vaccines, and communication to the public on the performance of the vaccines. These data are more specific and are not available through other surveillance systems. Sustained increases in our vaccine effectiveness studies are needed to improve our understanding of how well different vaccine products work, and factors that influence how individuals respond to influenza vaccination and infection.

In the coming years, CDC will continue its collaboration with FDA, NIH, and BARDA to fight influenza through improvements in the vaccine production process, better detection and tracking of influenza illness and viruses, the development of new influenza vaccines and monitoring of vaccine effectiveness, and improvements in influenza treatment and control.

Outbreaks of vaccine preventable disease (VPDs) continue to challenge our public health system. In 2019, over 1000 cases of measles have occurred in the United States. That's more cases of measles in a single year than we've seen in the past 25 years. Nearly 75 percent of these cases can be attributed to outbreaks in New York City and New York state, which occurred in insular, close-knit communities. The outbreaks put the United States in jeopardy of losing its measles elimination status, a distinction we had maintained for nearly 20 years. This close call has led us to reframe our approach to how we protect the public from vaccine-preventable diseases, including influenza.

CDC is implementing a new strategic framework, *Vaccinate with Confidence*, to strengthen public trust in vaccines and prevent vaccine-preventable disease outbreaks. We are doing this through an emphasis on three key priorities: First, *Protect Communities*: using every tool available, we will find and protect communities at risk using tailored, targeted approaches. This includes building on CDC's work to make sure that vaccines are available, affordable, and easy-to-get in every community in the U.S. Second, *Empower families*. CDC will help get parents the information they need to understand the risks from vaccine-preventable diseases and the safety of vaccines to feel confident about vaccination and equip health care providers with resources to help them have effective vaccine conversations. Third, *Stop myths*. We will work with local partners, using trusted messengers, to establish new partnerships and contain the spread of misinformation. To advance this, we've recently collaborated with social media companies like Pinterest and Facebook. We seek to reach new groups and stakeholders to provide clear information about vaccination and the critical role it plays in protecting the American public, fortifying them from vaccine misinformation.

CDC will continue to use innovative techniques to strengthen the public's trust in vaccines and prevent disease threats such as influenza. Thank you for the opportunity to speak with you today. I am happy to answer any questions you may have.