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United States Senate Committee on Health, Education, Labor, and Pensions  
“Vaccines Save Lives: What is Driving Preventable Disease Outbreak”  
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Testimony of

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Chairman Alexander, Ranking Member Murray, and distinguished members of the Committee, thank you for the opportunity to appear before the Senate Committee on Health, Education, Labor and Pensions today to discuss an issue of significant importance to the lives of the American people--protecting people from vaccine-preventable diseases. State, territorial, tribal, and local public health agencies are on the front lines implementing vital public health programs, including immunization programs, and responding to a wide array of public health emergencies such as disease outbreaks.

One of our objectives in public health is to share accurate, science-based information. To that end, allow me to say at the onset, vaccines are safe, effective, and the best protection we have against serious preventable diseases like measles. Vaccinating children in the United States has saved millions of lives, increased life expectancy, and saved trillions of dollars in societal costs.<sup>1</sup> Yes, like any medication, vaccines have some minor side effects and can have rare serious complications.<sup>2</sup> They can also eradicate diseases from our planet, like they did with smallpox and hopefully soon with polio.<sup>3, 4</sup> And in the United States, we have eliminated a number of vaccine preventable

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<sup>1</sup> Whitney, C. G., Zhou, F., Singleton, J., & Schuchat, A. (2014). Benefits from immunization during the vaccines for children program era—United States, 1994–2013. *MMWR* 2014;63(16): 352-355.

<sup>2</sup> McLean HQ, Fiebelkorn AP, Temte JL, Wallace GS. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013: Summary Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2013; 62(RR04):1-34. Available at <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm>

<sup>3</sup> <https://www.who.int/csr/disease/smallpox/en/> (accessed March 1, 2019)

<sup>4</sup> <https://www.who.int/features/factfiles/polio/en/> (accessed March 1, 2019)

diseases. In 2000 we thought the United States had eliminated measles, but that is no longer the situation with the number of outbreaks we have had since then.<sup>5</sup>

As secretary of health for Washington state, my mission is to protect and promote the lives of *all* the people in our state and when making public policy to ensure that it is based on the best science available to us. To that point, I want to speak directly to the parents who have children with autism and other serious health issues and who have been attending our hearings in Washington state and who are watching this hearing today. I see you and your children. I see your pain, your desire for answers to your children's health issues, your skepticism of government and the pharmaceutical industry, your mission to give your children the best life they can have and your desire to prevent other parents from the pain and suffering you and your children experience. Your mission to protect and promote the health of your children is a mission I share. And I know on this point, some of you will strongly disagree with me: the science demonstrates that autism is not caused by vaccines. But while the science on that is clear, we do need to better understand the causes of autism and other diseases better than we do today. We need to develop together—scientists, public health officials and affected families—research agendas to get the answers we all need. We need to create an environment where we can respectfully listen to each other and engage.

Public health systems at every level are struggling due to chronic underfunding, increasing population size, and the emergence of new threats. We find ourselves constantly reacting to crises, rather than working to prevent them. It is therefore incumbent upon all of us at the federal, state, and local levels to provide the sustained, predictable, and increased resources necessary to focus on health promotion and disease prevention work as well as respond to emerging and reemerging diseases.

### **Measles Outbreak**

Currently, there are six ongoing but completely preventable measles outbreaks in the U.S., including one in Washington, three in New York, one in Texas and one in Illinois.<sup>6</sup> Over the last 10 years, Washington state has had three measles outbreaks, one of which included the death of an immunocompromised person exposed to measles in a clinic waiting room.<sup>7</sup> The current outbreak is larger and infecting people faster than those in recent history. Between the end of December 2018 to March 1, 2019, Washington State has had 69 measles cases in our outbreak, plus four additional cases associated with our outbreak in Oregon and one in Georgia. Of the 69 Washington cases, 60 were unvaccinated, two had one dose of the measles vaccine and seven have an unverified immunization status. Two cases were hospitalized.

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<sup>5</sup> Papania, M. J., Wallace, G. S., Rota, P. A., Icenogle, J. P., Fiebelkorn, A. P., Armstrong, G. L., ... & Hao, L. (2014). Elimination of endemic measles, rubella, and congenital rubella syndrome from the Western hemisphere: the US experience. *JAMA pediatrics*, 168(2), 148-155.

<sup>6</sup> <https://www.cdc.gov/measles/> (accessed March 1, 2019)

<sup>7</sup> <https://www.doh.wa.gov/Portals/1/Documents/5100/420-004-CDAnnualReport2015.pdf> (accessed March 1, 2019)

In a global society with increased air travel, a disease outbreak in one part of the world can easily be transmitted to another by travelers. Our best protection against these preventable diseases is quite simple—vaccination. Currently, many countries in Europe are experiencing significant measles outbreaks.<sup>8</sup> In this latest outbreak in Washington, we know that an individual traveled to Washington state from Europe who was already infected, but not yet symptomatic, with a wild strain of the measles virus circulating there.<sup>9</sup> Fighting disease outside the U.S., as well as inside, promotes health security for everyone. Research shows every dollar invested in global immunization programs in the world's poorest countries saves \$16.<sup>10</sup> This is why we must fully fund the CDC and other health organizations to maintain disease-control activities globally.

According to the CDC, measles can be serious for all age groups. However, children younger than five years of age and adults over 20 years of age are more likely to suffer from measles complications. Common complications from the measles include ear infections, which can lead to permanent hearing loss, and diarrhea. However, some people may suffer from severe complications such as pneumonia and encephalitis. Finally, for every 1,000 people who get measles, one or two will die from it.<sup>11</sup> Measles is so contagious that if one person has it, 9 out of 10 people of all ages around him or her will also become infected if they are not protected.<sup>12</sup>

Even though there is an effective vaccine, measles still caused 110,000 measles deaths worldwide in 2017, mostly among children under five years of age.<sup>13</sup> In 1963, prior to the United States measles vaccination program, three to four million people a year were estimated to get measles, resulting in 48,000 hospitalizations and 450 to 500 measles deaths a year.<sup>14</sup> From 1989 to 1991, a resurgence of measles in the United States resulted in more than 55,000 cases and 120 deaths.<sup>15</sup> More than half of the children had not been vaccinated, even though they had seen a healthcare provider. In response, Congress created the Vaccine for Children program, which covers vaccines for those under 19 years of age on Medicaid, uninsured, underinsured, and American Indian/Alaskan Native.<sup>16</sup> In addition, the Advisory Committee on Immunization practices recommended the second dose of MMR.<sup>17</sup> We must continue the forward progress we have made protecting people from vaccine-preventable diseases.

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<sup>8</sup> <http://www.euro.who.int/en/media-centre/sections/press-releases/2018/measles-cases-hit-record-high-in-the-european-region> (accessed March 1, 2019)

<sup>9</sup> <https://www.clark.wa.gov/public-health/measles-investigation> (accessed March 1, 2019)

<sup>10</sup> Ozawa, S., Clark, S., Portnoy, A., Grewal, S., Brenzel, L., & Walker, D. G. (2016). Return on investment from childhood immunization in low-and middle-income countries, 2011–20. *Health Affairs*, 35(2), 199-207.

<sup>11</sup> <https://www.cdc.gov/measles/about/complications.html> (accessed March 1, 2019)

<sup>12</sup> <https://www.cdc.gov/measles/about/transmission.html> (accessed March 1, 2019)

<sup>13</sup> <https://www.who.int/news-room/fact-sheets/detail/measles> (accessed March 1, 2019).

<sup>14</sup> <https://www.cdc.gov/measles/downloads/measlesdataandstatsslideset.pdf> (accessed March 1, 2019)

<sup>15</sup> <https://www.cdc.gov/vaccines/pubs/pinkbook/meas.html> (accessed March 2, 2019)

<sup>16</sup> <https://www.cdc.gov/vaccines/programs/vfc/about/> (accessed March 2, 2019)

<sup>17</sup> CDC. Measles prevention: recommendations of the Immunization Practices Advisory Committee (ACIP). *MMWR* 1989;38(No.S-9):1-18. Available at: <https://www.cdc.gov/mmwr/preview/mmwrhtml/00041753.htm>

## **Vaccine Effectiveness**

The widespread use of measles vaccine led to a greater than 99% reduction in measles cases compared with the pre-vaccine era.<sup>18</sup> Two doses of the measles, mumps, and rubella (MMR) vaccination are 97% effective against measles.<sup>19</sup> And it is estimated worldwide that because of the measles vaccine, 20.5 million deaths were prevented between 2000 and 2016.<sup>20</sup>

It is important to note however, that some vaccines are not as effective as we would like. For example, according to the CDC the overall effectiveness of the 2017-2018 flu vaccine against both influenza A and B viruses was estimated to be 40%. This means the flu vaccine reduced a person's overall risk of having to seek medical care at a doctor's office for flu illness by 40%.<sup>21</sup> While the effectiveness of the flu vaccine can vary, it is still the best protection against this annual illness, and was estimated to prevent about 110,000 flu hospitalizations, and 8,000 flu deaths during the 2017-18 season.<sup>22</sup> A more effective vaccine would save even more lives. Similarly, protection from the current pertussis vaccine has been shown to wane during the five years after completion of the 5<sup>th</sup> childhood dose.<sup>23</sup> As a nation, we must continue to invest in critical research and vaccine technology to improve vaccine development.

## **Consequence of Vaccine Success**

Due to the success of vaccines, fewer people have witnessed the complications and severity of vaccine preventable diseases. Unfortunately, this means that some parents may believe that vaccination is no longer necessary or that the minor or rarely severe complications from vaccines are somehow worse than getting the disease, resulting in some parents not vaccinating their children. Discredited and fraudulent research has been used as a basis to claim a link between MMR and autism.<sup>24</sup> Moreover, public health officials throughout the country are gravely concerned about the latest misinformation originating from a well-organized and orchestrated anti-vaccination movement.

In communities across Washington state and our nation, there are pockets of children who are not fully vaccinated or not vaccinated at all. This puts them at risk to contract measles and unintentionally spread it to others, especially since one is infectious with measles four days before the rash develops. It is absolutely paramount that public health and healthcare professionals across the nation join together to share the science about the safety and efficacy of vaccines with the public. And we must equip health care

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<sup>18</sup> <https://www.cdc.gov/measles/vaccination.html> (accessed March 1, 2019)

<sup>19</sup> <https://www.cdc.gov/measles/hcp/index.html>

<sup>20</sup> <https://www.cdc.gov/measles/downloads/measlesdataandstatsslideset.pdf> (accessed March 1, 2019)

<sup>21</sup> <https://www.cdc.gov/flu/about/season/flu-season-2017-2018.htm>

<sup>22</sup> <https://www.cdc.gov/flu/about/burden-averted/index.htm>

<sup>23</sup> Cherry JD. The 112-year odyssey of pertussis and pertussis vaccines—mistakes made and implications for the future. *JPIDS*. 2019; XX(XX):1-8.

<sup>24</sup> Eggertson, L. (2010). Lancet retracts 12-year-old article linking autism to MMR vaccines. *Canadian Medical Association Journal*, 182(4), E199.

providers to be able to effectively answer the questions their patients may have about vaccines, as we do want parents with questions to engage their trusted health care provider. The health concerns that parents have over the risks of vaccination must be addressed with compassion, care, and evidence-based practice so that informed decisions can be made, and so that people can protect themselves and their loved ones from dangerous, vaccine-preventable disease.

## **Communications Challenges**

Public health and healthcare professionals face significant communications challenges with those who are uncertain about vaccinations because of fear, distrust, and/or misinformation. The increasing influence social media has over personal health decisions by promoting false information is alarming.

Admittedly, public health officials must be smarter in using media of all types to share factual, credible information. We must call on social media companies such as Twitter, Facebook, and Google to use whatever mechanism they have available to stop promoting pseudoscience. And the problem isn't limited to social media, traditional media can spread this false information as well. As public health officials, we often partner with traditional media outlets to spread critical life-saving information to the public. When traditional media invites and promotes celebrity spokespeople who question the validity of immunizations and remain blind to the body of scientific evidence, it makes our jobs all the more difficult, and frankly, puts the public's health at risk.

Civic discourse on vaccinations must be improved. Individuals opposed to vaccinations are extremely well organized across the country. In Washington, state lawmakers who proposed legislation to remove the personal exemption from vaccination have received death threats and been stalked. A health care professional who recently testified in support of removing philosophical exemptions for school entry vaccination has been vilified on their health practice website and in nasty social media posts.

For my part, I recently received an email from a parent who does not vaccinate their child concerning a social media post from my agency. Many of you have probably seen the post as it was going around many people's social media accounts during valentine's day. It's a cartoon of a school boy asking a school girl if she will be his valentine, and she asks if he has been vaccinated. While this social media post had one of our most shares ever and most likes, laughing faces, and angry faces, I have come to understand how this post just furthers the divide. I can do better, we all can do better. In fact, we must do better to focus on our mutual interest of keeping kids healthy.

I completely agree with CDC Director Robert Redfield who said we need to change the hearts and minds of people in this country to not leave science on the shelf.<sup>25</sup> Additional

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<sup>25</sup> <https://www.seattletimes.com/seattle-news/health/cdc-director-federal-health-officials-stress-importance-of-measles-vaccinations/> (accessed March 1, 2019)

federal funds should be provided to determine how best to communicate with vaccine hesitant parents and to counter the misinformation currently being spread.

### **Washington State's Vaccine Program**

Each year Washington State receives \$105 million in federal funding and \$66 million in state funding to support a comprehensive immunization system. Federal funding has a critical role in achieving national immunization coverage targets. It supports immunization system infrastructure and the purchase of vaccines for children who qualify and adults without health insurance. Our state supplements these federal funds to support health care providers and facilities, help parents make informed decisions, and partner with schools.

During my tenure we've worked hard to keep communities protected, ensure stable funding for vaccines and build public/private partnerships to strengthen the immunization infrastructure. For example, we have increased the number of 13 to 17 year olds who started human papillomavirus (HPV) vaccination series from 46 percent in 2015 to 61 percent 2018. This means that more youth in Washington are protected from the many cancers that HPV can cause.

One of the biggest challenges with childhood immunization in Washington is the percentage of students out-of-compliance with state law because the parents have not submitted immunization documentation or exemption paperwork with the school. In the 2017-2018 school year, 8.0% of kindergarten students lacked appropriate paperwork and were out-of-compliance. We believe this is largely because of the administrative burden on schools to staff this health work and track the paperwork from parents. To address this, we need to adequately fund school nurses. Our schools today are woefully understaffed with school nurses. This does not put our children first. Public health needs to partner with school nurses to ensure kids are vaccinated and keep our kids safe and healthy, especially during disease outbreaks. We are also working on health technology solutions to help school personnel easily access immunization records in our state immunization registry, which reduces duplicate data entry and allows for the easy use of report writing functions to track the immunization status of students.

In addition, Washington is one of 17 states that allow parents to send their children to school and child care unvaccinated for personal or philosophical reasons. Two state lawmakers from Clark County have each introduced legislation designed to protect more children from vaccine preventable disease and increase the safety of these environments. One bill would eliminate the philosophical exemption for the MMR vaccine. The other would eliminate that exemption for all vaccines required for school or child care entry. This approach honors the responsibility we all have to protect each other. This proposed policy change is a good step forward and one I support. Vaccines are the best protection we have: they are safe, readily available, given without charge to all kids under 19 years of age in Washington state and proven to be effective. And I believe that parents want safe schools and childcare centers for all kids and those

adults who serve them, including those who can't be vaccinated for medical reasons or who have lost their immunity due to serious medical conditions.

### **Public Health Response to a Measles Outbreak**

In Washington, Governor Jay Inslee issued a Public Health Emergency Proclamation on January 25, 2019 to support the response efforts to our measles outbreak.<sup>26</sup> This proclamation allowed mutual aid assistance through the Emergency Management Assistance Compact enabling the state to request public health responders from other states to support the outbreak response. North Dakota, Idaho, and Oregon provided staff to assist with the outbreak response.

To date, this preventable outbreak has cost over \$1 million and required the work of more than 200 individuals contributing over 10,000 hours of work. These estimates do not take into account the health care costs of those ill, the cost to schools and businesses as they responded to the event, the cost to student learning for those unvaccinated children excluded from school, and to the lost productivity of their workers. In comparison, the cost of an MMR vaccine dose is about 20 dollars.<sup>27</sup>

### **Importance of Federal Funding and Programs**

Our response to this outbreak has benefited greatly from the Federal government. The Pandemic and All Hazards Preparedness Act (PAHPA) authorities and funding over the years have allowed us to train, build, and maintain a strong Incident Management Team, which has ably led the response, and it has allowed us to develop strike teams to send into the response to carry out public health functions.

The public health system is often invisible to most Americans when it is working well. It is when an emergency or a disaster or an outbreak strikes where the fragility and chronic underfunding of the public health system is laid bare. As just one example, in Washington, Clark County repurposed their home visiting nurses to address this outbreak. The day to day job of the home visiting nurses is to assist expectant and new mothers, many in high-risk situations, to help improve birth outcomes and raise healthy children. By redirecting their work, families are going without this critical service and increasing the risk for bad health outcomes.<sup>28</sup>

In public health, we see the need to modernize. We do our best to make the most with the limited budgets we have. This is why federal funding is foundational for state, territorial, tribal and local health agencies to provide a comprehensive immunization system and emergency preparedness and response capability.

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<sup>26</sup> <https://www.governor.wa.gov/news-media/inslee-declares-local-public-health-emergency-after-identifying-outbreak-measles> (accessed March 1, 2019)

<sup>27</sup> <https://www.cdc.gov/vaccines/programs/vfc/awardees/vaccine-management/price-list/index.html> (accessed March 1, 2019)

<sup>28</sup> <https://www.columbian.com/news/2019/feb/25/nurse-family-partnership-takes-on-intangible-costs-of-measles-outbreak/> (accessed March 2, 2019)

In this case, federal funds from Section 317 of the Public Service Act are used to support the immunization grant program and provide vital resources to support our comprehensive system. Section 317 funding provides support for our state to educate and inform the public, monitor vaccine effectiveness, account for the use of federal and state dollars, decrease ethnic and racial disparities, have strong outbreak investigation, improve tracking systems, and continue to provide the necessary support to health care professionals. Yet, the 317 immunization grant program has been flat funded since 2009. Without increased funding, we cannot afford to develop new and innovative ways to increase immunization rates especially in light of the anti-vaccine movement. Research shows every dollar spent on childhood vaccines saves 10 dollars, so this is a worthwhile investment.<sup>29</sup> Additional funding would help address growing gaps in immunization coverage and strengthen the scientific foundation for vaccine policy decision making.

The Pandemic and All Hazards Preparedness Act (PAHPA) provides a framework and resources to support our emergency preparedness and response. Funds from the Public Health Emergency Preparedness Cooperative Agreement Program allows state health departments to build and strengthen our ability to respond to public health emergencies. Without this funding, state and local public health agencies would have been significantly delayed in identifying and containing this measles outbreak. This program is currently funded \$400 million below funding levels in the 2000s. More robust funding would allow public health agencies to not have to reallocate resources from other vital public health programs to respond to urgent public health emergencies like measles outbreaks or other disasters. Despite this Committee's action to reauthorize the law last year, it has now lapsed; I ask you to move quickly to reauthorize PAHPA.

The Prevention and Public Health Fund is the nation's first mandatory funding stream dedicated to improving our nation's public health system. The purpose of the fund was to supplement core public health programs with increased investment in disease prevention, yet it has primarily been used to backfill the funding of core public health programs. Currently 47% of the 317 immunization program is funded by the Prevention and Public Health Fund. Research shows every dollar invested in community-based prevention saves \$5.<sup>30</sup>

I'm here to make clear the threat of these vaccine preventable illnesses, so we can respond together to restore health to the very part of our system responsible for prevention. One immediate response Congress can take is to raise the budget of the Centers for Disease Control and Prevention by 22 percent by 2022, as requested by the Association of State and Territorial Health Officials and over 80 other organizations.<sup>31</sup> Doing so will immediately begin to save lives, promote optimal health for all, bolster our prevention services and reduce healthcare costs.

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<sup>29</sup> Rémy, Vanessa, York Zöllner, and Ulrike Heckmann. "Vaccination: The cornerstone of an efficient healthcare system." *Journal of market access & health policy* 3.1 (2015): 27041.

<sup>30</sup> *Prevention for a Healthier America: Investments in Disease Prevention Yield Significant Savings, Stronger Communities*, Trust for America's Health, 2009.

<sup>31</sup> <http://www.astho.org/Advocacy-Materials/22-by-22/> (accessed March 1, 2019)



**Conclusion**

Vaccines are a testament to human ingenuity to ward off morbidity and mortality. Vaccines activate the natural human immunity system. The science is clear that vaccines are safe and effective. Vaccines can eradicate diseases. Vaccine programs are one of public health's greatest accomplishments. They are under great threat and we need to reverse course.

I thank you for holding this hearing and increasing awareness about the importance of vaccines and public health. Everyone has a right to live in a community free of vaccine-preventable disease. We must continue to invest in and strengthen our public health system.