



MEMORANDUM

February 22, 2019

To: Subcommittee on Oversight and Investigations Members and Staff

Fr: Committee on Energy and Commerce Staff

Re: Hearing on “Confronting a Growing Public Health Threat: Measles Outbreaks in the U.S.”

On **Wednesday, February 27, 2019, at 10 a.m. in the John D. Dingell Room, 2123 of the Rayburn House Office Building**, the Subcommittee on Oversight and Investigations will hold a hearing entitled, “Confronting a Growing Public Health Threat: Measles Outbreaks in the U.S.” The hearing will examine the public health surveillance and infrastructure response to the current measles outbreaks in the United States.

I. BACKGROUND

Measles is a highly contagious, airborne virus that can cause serious respiratory illness and life-threatening complications.¹ Children younger than five years of age, adults older than 20 years of age, those who are pregnant, and people with compromised immune systems are more likely to suffer from measles complications.² Common complications from measles include ear infections and diarrhea, while severe complications include pneumonia and encephalitis (swelling of the brain).³ One or two deaths occur among every 1,000 children who acquire measles.⁴

According to the Centers for Disease Control and Prevention (CDC), almost all children acquired measles by age 15 in the decade prior to the introduction of the measles vaccine in 1963. At that time, there were an estimated 3 to 4 million people infected with measles in the United States and as many as 500 related deaths each year.⁵ In 2000, measles was declared eliminated—meaning no continuous disease transmission for more than 12 months—in the

¹ Centers for Disease Control and Prevention, *Complications of Measles* (www.cdc.gov/measles/about/complications.html) (accessed Feb. 14, 2019).

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ Centers for Disease Control and Prevention, *Measles History* (www.cdc.gov/measles/about/history.html) (accessed Feb. 14, 2019).

United States.⁶ CDC credits this to a “highly effective vaccination program,” as well as “better measles control in the Americas region.”⁷

More than 20 million lives have been saved around the world since 2000, due to the measles vaccine.⁸ Since 2010, there have been increases in some years in U.S. measles cases. The number of yearly measles cases has ranged from a low of 55 in 2012, to a high of 667 in 2014.⁹ The increase is attributable to unvaccinated travelers who acquire measles abroad, returning with the virus to the United States, and additional spread among pockets of unvaccinated people in local communities.¹⁰

II. RECENT MEASLES OUTBREAKS

Since last fall, there have been multiple measles outbreaks in the United States. Thus far in 2019, there are reports of 127 individual measles cases in 10 states.¹¹ This total consists of five outbreaks, defined as three or more measles cases, reported in New York (Monroe County, Rockland County, and New York City), Texas, and Washington.¹² Additional cases have been reported in California, Colorado, Connecticut, Georgia, Illinois, Kentucky, and Oregon.¹³ In the entire year of 2018, there were 17 outbreaks and a total of 372 measles cases in the United States.¹⁴

More than 50 percent of the outbreak cases this year occurred in Clark County, Washington, a suburb of Portland, Oregon, with 63 confirmed cases of measles as of February 18, 2019.¹⁵ Of the 64 confirmed cases in Clark County, 56 involved people who were not vaccinated against the disease, and 46 of those infected were children between the ages of one and 10.¹⁶ According to CDC’s most recent available data, 91.1 percent of children ages 19–35 months nationwide have received at least one dose of the measles, mumps, and rubella (MMR)

⁶ *Id.*

⁷ *Id.*

⁸ Dabbagh A, et al. *Progress Toward Regional Measles Elimination – Worldwide, 2000-2016*. Morbidity Mortality Weekly Report 2017;66:1148-1153 (www.cdc.gov/mmwr/volumes/66/wr/mm6642a6.htm) (Oct. 27, 2017).

⁹ Centers for Disease Control and Prevention, *Measles Cases and Outbreaks* (www.cdc.gov/measles/cases-outbreaks.html) (accessed Feb. 21, 2019).

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*; Clark County, Washington Public Health, *Measles Investigation* (www.clark.wa.gov/public-health/measles-investigation) (accessed Feb. 22, 2019).

¹⁶ *Id.*

vaccine.¹⁷ By the end of 2018, only 81 percent of one- to five-year-old children, and just 78 percent of six- to 18-year olds in Clark County had received the age-appropriate number of MMR vaccine dosage.¹⁸

III. PREVENTION AND RESPONSE

Measles can be prevented with a very safe and effective combination MMR vaccine. One dose of MMR vaccine, recommended at 12-15 months of age, is approximately 93 percent effective at preventing measles; a second dose recommended at four to six years of age increases its effectiveness against measles to 97 percent.¹⁹ CDC has determined that receiving the MMR vaccine is safer than getting any of the viruses.²⁰ As with any medication, CDC notes that “there is a chance of reactions,” but that these are “usually mild” and “most people who get MMR vaccine do not have any problems.”²¹ There is no antiviral therapy to treat measles. Medical care for those with measles is supportive, such as relieving symptoms and addressing complications.²²

The estimated population immunity rate at which transmission of measles will stop, known as “herd immunity,” is estimated to be 93-95 percent.²³ While nationwide the overall vaccination rates remain high, in 2017, the estimated MMR vaccination coverage among 13–17-year-old adolescents ranged from 77.8 percent to 97.9 percent across states and local counties in the United States.²⁴

¹⁷ Centers for Disease Control and Prevention, *Immunization*, National Center for Health Statistics (www.cdc.gov/nchs/fastats/immunize.htm) (accessed Feb. 15, 2019).

¹⁸ Clark County, Washington Public Health, *What are the Immunization Rates for Children in Clark County?* (www.clark.wa.gov/public-health/faq/what-are-immunization-rates-children-clark-county) (accessed Feb. 8, 2019).

¹⁹ Centers for Disease Control and Prevention, *For Healthcare Professionals* (www.cdc.gov/measles/hcp/index.html) (accessed Feb. 15, 2019).

²⁰ Centers for Disease Control and Prevention, *MMR VIS* (www.cdc.gov/vaccines/hcp/vis/vis-statements/mmr.html) (accessed Feb. 15, 2019).

²¹ *Id.*

²² *Id.*

²³ Funk, S., *Critical Immunity Thresholds for Measles Elimination*, Centre for the Mathematical Modelling of Infectious Diseases London School of Hygiene & Tropical Medicine (www.who.int/immunization/sage/meetings/2017/october/2._target_immunity_levels_FUNK.pdf) (Oct. 19, 2017).

²⁴ Centers for Disease Control and Prevention, *TeenVaxView: 2008 Through 2017 Adolescent Measles, Mumps, and Rubella (MMR) Vaccination Coverage Trend Report* (www.cdc.gov/vaccines/imz-managers/coverage/teenvaxview/data-reports/mmr/trend/index.html) (accessed Feb. 15, 2019).

Further, while there is less disparity among those who have at least one dose of the MMR vaccine compared to other recommended childhood vaccines, disparities persist by race and ethnicity, geographic location, sociodemographic factors, and insurance status.²⁵

Nearly 90 percent of local health departments across the country provide both childhood and adult immunization programming and services.²⁶ When measles cases and outbreaks occur, state and local health departments lead the investigation and response activities.²⁷

IV. AGENCY RESPONSIBILITIES

CDC operates the National Notifiable Diseases Surveillance System, which includes national reports of probable and confirmed measles cases.²⁸ Additionally, CDC administers two programs, the Public Health Services Act Section 317 Immunization Program and the Vaccines for Children (VFC) program, which provide vaccines to uninsured and underinsured children, adolescents, and adults. The two programs also support local, state, and national infrastructure necessary to reach these populations.²⁹

The National Institutes of Health, through the National Institute for Allergy and Infectious Diseases, conducts and supports research to generate the essential knowledge for developing safe and effective vaccines.³⁰

²⁵ Centers for Disease Control and Prevention, *Vaccination Coverage Among Children Ages 19-35 Months—United States, 2017*, Morbidity Mortality Weekly Report, 2018/67(40); 1123–1128 (www.cdc.gov/mmwr/volumes/67/wr/mm6740a4.htm) (Oct. 12, 2018).

²⁶ National Association of County & City Health Officials, *2016 National Profile of Local Health Departments – Highlights Report* (http://nacchoprofilestudy.org/wp-content/uploads/2017/10/Summary_Report_Oct2017_Final.pdf) (Jan. 2017).

²⁷ Association of State and territorial Health Officials, *Measles Outbreaks and School Exclusions: Public Health’s Authority to Protect Children and Stop the Spread of Disease* (www.astho.org/StatePublicHealth/Measles-Outbreaks-and-School-Exclusions/02-07-19/) (Feb. 7, 2019).

²⁸ Centers for Disease Control and Prevention, *Measles (Rubeola) For Public Health Professionals* (www.cdc.gov/measles/stats-surv.html) (accessed Feb. 15, 2019).

²⁹ Centers for Disease Control and Prevention, *Justification of Estimates for Appropriations Committees* (www.cdc.gov/budget/documents/fy2019/fy-2019-cdc-congressional-justification.pdf) (Fiscal Year 2019).

³⁰ National Institute of Allergy and Infectious Diseases, *Vaccines* (www.niaid.nih.gov/research/vaccines) (accessed Feb. 19, 2019).

V. WITNESSES

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