

AFFIDAVIT OF ALVIN MOSS, M.D.

STATE OF WEST VIRGINIA)

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COUNTY OF MONONGALIA)

Alvin Moss, M.D., FACP, FAAHPM, being duly sworn, deposes and says:

1. I am the Director of the West Virginia University Center (WVU) for Health Ethics and Law at the West Virginia University Health Sciences Center in Morgantown, West Virginia. I hold an appointment as a Professor of Internal Medicine in the Sections of Nephrology and Geriatrics & Palliative Medicine in the School of Medicine at WVU. I earned a Bachelor of Arts degree from Harvard University in Cambridge, Massachusetts, a Doctorate of Medicine (M.D.) degree from the University of Pennsylvania School of Medicine in Philadelphia, Pennsylvania, and a certification in medical ethics from the University of Chicago MacLean Center for Clinical Medical Ethics. I trained in Internal Medicine at the University of North Carolina School of Medicine/North Carolina Memorial Hospital in Chapel Hill, North Carolina and completed a fellowship in Nephrology at the University of Colorado School of Medicine in Denver, Colorado. I am board-certified in Internal Medicine, Nephrology, and Hospice and Palliative Medicine by the American Board of Internal Medicine. I have published over 150 articles and 20 book chapters in the peer-reviewed literature. My opinions are my own and are based on 44 years' experience of practicing medicine and studying the medical literature. They are not those of my employer.

2. In 1962, Dr. Alexander Langmuir, the chief of epidemiology for the forerunner to the CDC, said measles is “a self-limiting infection of short duration, moderate severity, and low fatality.”¹
3. The 1959 edition of the standard pediatrics text said, “Case fatality rates in the US [from measles] have decreased in recent years to low levels for all age groups, in part perhaps because of improved living conditions but also because of antibacterial therapy for the treatment of secondary infections.”²
4. Some media reports state that 1 of every 1,000 people with measles die. Considering that the CDC stated that in 1960 only 10% of measles cases were **reported**, a more accurate statistic is that 1 in 10,000 cases are fatal³, and that number is likely over stated because there is better treatment for measles now than in 1960.
5. The CDC, WHO, and the AAP all recommend vitamin A treatment for children with measles. This treatment has been found to reduce measles mortality by as much as 60%. There are also better antibiotics available in 2019 than existed in 1960 for common measles complications such as bacterial pneumonia.
6. Primary measles vaccine failure is reported in up to 40% of those vaccinated, which in 1989 prompted the CDC to recommend a second MMR vaccine dose prior to school entry.⁴
7. As Greg Poland, M.D., editor of *Vaccine*, summarized in 2012, secondary measles vaccine failure has also been recognized as a problem: “Thus, measles outbreaks also occur even among highly vaccinated populations because of primary and secondary vaccine failure,

¹ Langmuir AD. Medical importance of measles. *Am J Dis Child*. 1962 Mar;103:224-226.

² Nelson WE, ed. *Textbook of Pediatrics*, 7th ed. Philadelphia: W.B. Saunders Company, 1959, p. 486.

³ *Morbidity and Mortality Weekly Report*. Measles. Week of October 25, 1969. 18 (43):10.

⁴ <https://www.cdc.gov/mmwr/preview/mmwrhtml/00041753.htm>, last viewed September 4, 2019.

which results in gradually larger pools of susceptible persons and outbreaks once measles is introduced.”⁵

8. There are estimates from the CDC of secondary measles vaccine failure occurring in as many as 33% of those with two MMR vaccinations within 20 years after the second vaccination.⁶
9. In other words, 33% of adults over the age of 25 may be susceptible to measles infection due to the failure rate of the MMR vaccine.
10. For example, according to the New York City Department of Mental Hygiene, a 2011 measles outbreak was reported when an adult who had received 2 doses of measles-containing vaccine infected four other adults who also had received 2 doses of measles-containing vaccine (or had documented measles IgG protective antibody levels). All patients had laboratory confirmation of measles infection, clinical symptoms consistent with measles, and high-avidity IgG antibody characteristic of a secondary immune response.⁷ The 2011 measles outbreak was due solely to “vaccine failure.” MMR vaccine is not as effective as public health officials claim.
11. Further, a March 2019 study raises significant concerns about the safety of the MMR vaccine. In a study in the *Journal of the Pediatric Infectious Diseases Society*, 5,003 children were given either Merck’s MMR II vaccine or GlaxoSmithKline’s MMR-RIT. Of these children, 509 (10.1%) had an adverse reaction prompting an Emergency Department visit; 310 (6.1%) had a grade 3 reaction defined as temperature higher than 39.5° C (103° F) degrees (fever), not eating at all, inconsolable crying, redness and/or swelling at the

⁵ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3905323/>, last viewed September 4, 2019.

⁶ <https://www.ncbi.nlm.nih.gov/pubmed/17339511>, last viewed September 4, 2019.

⁷ <https://www.ncbi.nlm.nih.gov/pubmed/24585562>, last viewed September 4, 2019.

injection site > 20 mm, and limb spontaneously painful or child cried when limb moved; and 176 (3.4%) had new onset chronic disorders including autoimmune disorders, asthma, type 1 diabetes, vasculitis, celiac disease, thrombocytopenia, and allergies.⁸ MMR vaccine is not as safe as public health officials claim.

12. Historically, herd immunity has been potentially considered to be achieved if 95% of the population in a community is vaccinated.
13. However, there is a major fallacy in the belief that herd immunity is possible with regard to measles due to primary and secondary MMR vaccine failure.
14. According to a 2007 CDC study, at any one time, less than 70% of the US population, including twice vaccinated adults and children, may have immunity from measles.⁹
15. According to a 2003 mathematical model published in the journal *Vaccine*, more and more of the population will have lost the protection from measles infection induced by vaccination as time goes by.¹⁰
16. According to a 2016 CDC study, a third MMR vaccination will not result in sustained immunity from measles infection, concluding that they “did not find compelling data to support a routine third dose of MMR vaccine.”¹¹
17. Herd immunity, again, is the reassuring theory that high vaccination rates within a population as a whole will protect the small number of individuals who are vulnerable to contracting an infection due to a variety of factors such as those who are unvaccinated, immunocompromised, or overall vaccine failure.

⁸ <https://www.ncbi.nlm.nih.gov/pubmed/30849175>, last viewed September 4, 2019.

⁹ <https://www.ncbi.nlm.nih.gov/pubmed/17339511>, last viewed September 4, 2019.

¹⁰ <https://www.ncbi.nlm.nih.gov/pubmed/14575773>, last viewed September 4, 2019.

¹¹ <https://www.ncbi.nlm.nih.gov/pubmed/26597262>, last visited September 4, 2019.

18. This theory was first developed by observing natural disease outbreaks prior to the existence of vaccines. When these diseases are contracted naturally, lifetime immunity typically results and plays a critical part in the concept of herd immunity.
19. In order for herd immunity theory to hold true outside of a “natural disease” and lifetime immunity population, there must be a homogenous population, well-mixing of the population must occur, unvaccinated status must be random, vaccines must have perfect efficacy, and the age distribution of the population must be uniform. None of those criteria are currently in place.
20. Vaccinated populations do not share the same characteristics as naturally immune populations, which renders the theory of herd immunity to be quite erroneous.
21. The first flawed assumption is that perfect vaccine efficacy occurs. In actuality, *primary vaccine failure* can occur in up to 2-10% of vaccinated individuals. These individuals do not respond with sufficient antibody production to provide protection and some will fail to do so even with additional boosters. This means the vaccines do not work on these individuals and exposure to measles would result in infection.
22. In addition, *secondary vaccine failure* can occur. This is when vaccine-induced antibodies wane over time and render an individual unknowingly unprotected later in life, despite having been vaccinated.
23. For example, during the 1989–1991 U.S. measles outbreaks, 20-40% of the individuals affected had been previously immunized with one to two doses of vaccine.¹²
24. A serious consequence of this vaccine failure is that the disease burden has been shifted to more vulnerable populations; as a result, illnesses that were typically benign and self-

¹² <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3905323/>, last visited September 4, 2019.

limiting in children are now occurring in adults where the risk of serious complications are much greater. One study suggests that lapsed vaccine immunity has led to negative outcomes that are 4.5 times worse for measles, 2.2 times worse for chickenpox and 5.8 times worse for rubella, compared to the pre-vaccine era. The waning immunity that occurs with secondary vaccine failure will never result in a population with a true herd immunity articulated goal of 90-95% being “protected.”

25. “Herd immunity” cannot be narrowed to a subset of the larger community, such as school-aged children. Therefore, even in the event that 100% of school-aged children were vaccinated, this does not necessarily mean that “herd immunity” is achieved, especially if a large percent of adults have lost their vaccine-induced antibodies.
26. Both primary and secondary vaccine failure account for the occurrence of vaccine preventable illnesses in highly and even fully vaccinated populations. This has been described extensively in published literature.
27. One example cited by NYU School of Law Professor Mary Holland, Esq. and Chase Zachary, J.D., Ph.D Chemistry, was a 1985 measles outbreak in a Texas high school where 99% of the students had been vaccinated and 96% had detectable measles antibodies. The authors of the outbreak report acknowledged that, under herd immunity theory, “such an outbreak should have been virtually impossible.”¹³
28. In an October 2011 outbreak in Canada, over 50% of the 98 infected individuals had received two doses of measles vaccine. Thus, measles outbreaks also occur even among highly vaccinated populations because of primary and secondary vaccine failure, which

¹³ <https://scholarsbank.uoregon.edu/xmlui/handle/1794/18592>, last visited September 4, 2019.

results in gradually larger pools of susceptible persons and outbreaks once measles is introduced.

29. This leads to a paradoxical situation whereby measles in highly immunized societies occurs primarily among those previously immunized.

30. More recent studies around the world describe mumps and pertussis outbreaks in highly or fully vaccinated middle and high school populations, including in Belgium (2004), Korea (2006), the U.S. (2007) and Ontario (2015). The Ontario researchers perplexedly stated, “In light of the high efficacy of the MMR (measles-mumps-rubella) vaccine against mumps, the reason for these outbreaks is unclear.”¹⁴

31. The failure of the current MMR vaccine and its inability to prevent measles outbreaks in highly vaccinated populations is specifically addressed by Gregory Poland, MD, MACP, and Robert Jacobson, MD, FAAP, in the January 2012 issue of *Vaccine*.

32. Despite these caveats, most public health officials continue to push even higher rates of compulsory vaccination and continued boosters throughout the lifespan without any convincing evidence of efficacy. As Holland and Zachary painstakingly show, illogical mandates and “imperfect vaccine technology” mean that “herd immunity... is not attainable.”¹⁵

33. Even a one hundred percent vaccination rate “cannot reliably induce herd immunity.” Thus, herd immunity is a “weak rationale” to compel all vaccines for all children.¹⁶

34. The theory of herd immunity is flawed and will never be achievable due to primary and secondary vaccine failure, unvaccinated adults, and importation of disease from travelers.

¹⁴ <https://cvi.asm.org/content/24/2/e00542-16>, last visited September 4, 2019.

¹⁵ <https://scholarsbank.uoregon.edu/xmlui/handle/1794/18592>, last visited September 4, 2019.

¹⁶ <https://scholarsbank.uoregon.edu/xmlui/handle/1794/18592>, last visited September 4, 2019.

35. In medicine, **prodrome** means an early sign or symptom (or set of signs and symptoms), which often indicate the onset of a disease before more diagnostically specific signs and symptoms develop. It is derived from the Greek word *prodromos*, meaning “running before.”
36. Vaccinated children pose more of a risk to other vaccinated children than the unvaccinated.
37. Typically, the measles prodrome with fever and unwell feeling develops four days before the child develops a rash. These children will be sick for days before a rash develops.
38. Vaccinated children with secondary vaccine failure may contract subclinical measles infection without rash and spread measles unknowingly to classmates.
39. Unvaccinated children will develop the measles disease with a rash, fever, cough, runny nose, and an unwell feeling; consequently, they will know they are sick, not go to school, and not expose vaccinated children. Thus, children with the measles prodrome will not be in school to infect others.
40. Furthermore, a child who is not vaccinated with the live measles virus vaccine IS NOT A CARRIER of measles and is LESS of a threat to other children than recently vaccinated children, who may be shedding live virus from the MMR vaccine.
41. Despite higher than average cases of measles in 2019, New York does not have a public health emergency warranting the repeal of the religious exemption and blocking students’ constitutionally-protected access to school and their religious liberty.

Alvin Moss, M.D.

Sworn to before me this the
_____ day of September 2019

Signature of Notary Public