

COOPED UP REGULATION: COMPULSORY INFLUENZA LIVESTOCK VACCINATION FOR POULTRY FARMS

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ABSTRACT

Amid the ongoing outbreak of H5N1 Highly Pathogenic Avian Influenza (HPAI) on poultry farms across the United States, the federal government's reactive approach of culling chicken flocks with detected infections has largely failed to limit transmission. Based on the successes of other countries in deploying livestock vaccines to immunize chicken flocks against H5N1 Highly Pathogenic Avian Influenza, the USDA is currently under industry and political pressure to shift its response strategy. This Essay examines the constitutional, statutory, and regulatory authority for the USDA to acquire livestock vaccines and mandate their use on farms that enter their chickens into interstate markets. It also considers the political economy of agricultural regulations and international trade considerations that potentially restrain the USDA's use of its agency authority. Without a federal livestock vaccine mandate, this disease will continue to inflict a growing burden on American farms and human lives.

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I. INTRODUCTION

For hundreds, if not thousands, of years, influenza viruses have burdened humanity with a mix of seasonal outbreaks and global pandemics.¹ Influenza A viruses are particularly dangerous to humans because they have many animal reservoirs.² Over many viral generations spread across millions of organisms, all pathogens can undergo antigenic drift, a process of random mutations under evolutionary pressure selecting the mutants with the highest infectivity or pathogenicity.³ Furthermore, influenza viruses are unique among pathogens for having a segmented genome, dividing their genes across eight ribonucleic acid (RNA) segments.⁴ When two Influenza A viruses of different genotypes infect the same host cell, they both hijack the host cellular machinery to make copies of themselves and sometimes produce progeny viruses with a combination of the RNA segments from their parents.⁵ This process of antigenic shift can result in sudden, significant genetic change, and similarly subjected to evolutionary pressure, Influenza A viruses can quickly increase their infectivity or pathogenicity, spawning outbreaks.⁶

Strains of H5N1 Highly Pathogenic Avian Influenza (HPAI), named for their subcategory of hemagglutinin and neuraminidase surface proteins, were first isolated in 1996.⁷ The following year, this virus spread from wild geese to humans in an outbreak that killed six people in China.⁸ Beyond an outbreak among birds in Southeast Asia during the mid-2000s, H5N1 HPAI viruses thereafter maintained a low prevalence until a 2020 antigenic shift event among migratory birds in China suddenly sparked the global spread of H5N1 HPAI.⁹ Infected animals are generally incapable of transmitting this virus to humans when their meat or pasteurized milk

1. C.W. Potter, *A History of Influenza*, 91 J. APPLIED MICROBIOLOGY 572, 572 (2001).

2. Colin R. Parrish, Pablo R. Murcia & Edward C. Holmes, *Influenza Virus Reservoirs and Intermediate Hosts: Dogs, Horses, and New Possibilities for Influenza Virus Exposure of Humans*, 89 J. VIROLOGY 2990, 2990 (2015).

3. Yuying Liang, *Pathogenicity and Virulence of Influenza*, VIRULENCE, June 20, 2023, at 1, 5.

4. Potter, *supra* note 1, at 578.

5. Hyunsuh Kim, Robert G. Webster & Richard J. Webby, *Influenza Virus: Dealing with a Drifting and Shifting Pathogen*, 31 VIRAL IMMUNOLOGY 174, 175 (2018).

6. *Id.*

7. Gabriele Neumann et al., *H5N1 Influenza Viruses: Outbreaks and Biological Properties*, 20 CELL RSCH. 51, 51–52 (2010).

8. *Id.* at 54.

9. *Id.* at 51, 52; Jon Cohen, *Bird Shots*, 380 SCI. 24, 26 (2023).

is consumed.¹⁰ However, antigenic shift creates the risk of zoonotic spillover, in which livestock herds incubating H5N1 HPAI develop a mutated strain capable of human-to-human transmission.¹¹

Since the Centers for Disease Control and Prevention (CDC) began testing for H5N1 HPAI among wild aquatic birds, commercial poultry, and backyard/hobbyist flocks across the United States in January 2022, it has identified 1,708 outbreaks across all fifty states and Puerto Rico.¹² Since March 2024, various ruminant farm animals across the United States, such as goats and dairy cattle, have also experienced H5N1 HPAI outbreaks, threatening the American food supply.¹³ The United Egg Producers trade association has deemed H5N1 HPAI “single-handedly responsible for the dramatic instability and losses in the nation’s egg supply” amid increased political attention to rising grocery prices.¹⁴ In 2024, 67 Americans were infected with H5N1 HPAI, resulting in one death.¹⁵ Amid the ongoing outbreak, many American farms and biotechnology firms have begun calling for the USDA to consider an H5N1 HPAI vaccination campaign across chicken flocks,¹⁶ necessitating an examination of the agency’s constitutional, statutory, and regulatory authority to do so.

Effective vaccines for immunizing chickens against H5N1 HPAI have existed for years, such that after the Chinese government required poultry to be vaccinated against the H5 and H7 subtypes of Influenza A in September 2017 to counter an outbreak, detections of these subtypes were significantly reduced across urban poultry markets.¹⁷ In 2023, the European Food Safety Authority’s Panel on

10. Cohen, *supra* note 9, at 24, 27; Erica Spackman et al., *Inactivation of Highly Pathogenic Avian Influenza Virus with High-Temperature Short Time Continuous Flow Pasteurization and Virus Detection in Bulk Milk Tanks*, J. FOOD PROT., Oct. 2024, at 1, 2.

11. Cohen, *supra* note 9, at 26.

12. *USDA Reported H5N1 Bird Flu Detections in Poultry*, CTRS. FOR DISEASE CONTROL & PREVENTION: AVIAN INFLUENZA (June 13, 2025), <https://www.cdc.gov/bird-flu/situation-summary/data-map-commercial.html> [<https://perma.cc/9ZB5-FQDB>].

13. Hinh Ly, *Recent History and Biology of H5N1 Influenza A Virus Infections of Farm Animals (Poultry, Goat, Alpacas, Dairy Cattle, Barn Cats) and Humans in the United States of America*, J. MED. VIROLOGY, June 24, 2024, at 1, 1.

14. Lauren Hirsch, Danielle Kaye & Julie Creswell, *U.S. Investigates Egg Producers Over Soaring Prices*, N.Y. TIMES (Mar. 7, 2025), <https://www.nytimes.com/2025/03/07/business/us-egg-prices-investigation.html>.

15. Apoorva Mandavilli, *‘A Dangerous Virus’: Bird Flu Enters a New Phase*, N.Y. TIMES (Jan. 29, 2025), <https://www.nytimes.com/2025/01/27/health/bird-flu-h5n1.html>.

16. Cohen, *supra* note 9, at 27.

17. Jin Guo et al., *Pathogen Change of Avian Influenza Virus in the Live Poultry Market Before and After Vaccination of Poultry in Southern China*, VIROLOGY J., Oct. 29, 2021, at 1, 3.

Animal Health and Animal Welfare (EFSA AHAW) concluded that chickens would be fully protected against H5N1 HPAI within two weeks of widespread distribution of a well-matched poultry vaccine.¹⁸ The EFSA AHAW found that in modeled H5N1 HPAI epidemics, applying preventive vaccination across poultry farms resulted in fewer infected facilities and shorter outbreaks.¹⁹ These simulations were compared against the reactive approach of culling chickens on or near infected farms, which resembles the USDA's current approach.²⁰

Armed with scientific evidence that H5N1 HPAI vaccines are highly effective at immunizing chickens and countering farm outbreaks, the USDA must proceed by requiring chicken flocks to be vaccinated before their poultry products can be sold in interstate markets.²¹ Part II of this essay explores the USDA's statutory and regulatory authority to impose such a policy and the political considerations restraining its use of this power. Part III examines the international trade considerations and legal challenges that farmers may raise to block compulsory poultry vaccination, while recognizing that industry groups are already expressing openness to a mass animal vaccination campaign. Part IV concludes that the USDA must exercise its statutory and regulatory authority to require chickens to be vaccinated against H5N1 HPAI amid an outbreak that has been devastating to American farms.

II. THE USDA POSSESSES LEGAL AUTHORITY TO ACT

A. Statutory Authority

When Louis Pasteur, the father of germ theory, invented the first laboratory-developed vaccine in 1879, it was to combat fowl cholera by immunizing chickens.²² Applying Pasteur's methods, the USDA developed an effective vaccine for hog cholera in 1905 and freely licensed it to support American farmers.²³

18. Søren Saxmose Nielsen et al., *Vaccination of Poultry Against Highly Pathogenic Avian Influenza – Part 1. Available Vaccines and Vaccination Strategies*, EFSA J., Oct. 10, 2023, at 1, 43.

19. *Id.* at 6.

20. Brian Dean Abramson et al., *Vaccines and Animals*, in *VACCINE, VACCINATION, AND IMMUNIZATION LAW* 18-1, 18-13 (3d ed. 2025).

21. Nielsen et al., *supra* note 18, at 6.

22. *Louis Pasteur, ForMemRS*, THE COLL. OF PHYSICIANS OF PHILA.: HIST. OF VACCINES (Feb. 22, 2026, at 13:08 CT), <https://historyofvaccines.org/history/louis-pasteur-formemrs/timeline> [<https://perma.cc/PVP3-DBKB>].

23. NORMAN F. CHEVILLE, *PIONEER SCIENCE AND THE GREAT PLAGUES: HOW MICROBES, WAR, AND PUBLIC HEALTH SHAPED ANIMAL HEALTH* 120 (2021), https://www.jstor.org/content/pdf/oa_book_monograph/j.ctv1gm03g1?refreqid=fastly-

However, without the regulatory oversight that human vaccines receive, ineffective versions quickly proliferated, such that by 1913, the USDA Bureau of Animal Industry found that a third of animal vaccines had no effect and only a fourth were sufficiently potent for immunization.²⁴ In response, Congress passed the Virus-Serum-Toxin Act,²⁵ which authorizes the USDA to address “worthless, contaminated, dangerous, or harmful” animal vaccines by licensing manufacturing facilities engaged in interstate commerce through random testing of their products for efficacy.²⁶ As part of the Food Security Act of 1985, Congress expanded the Virus-Serum-Toxin Act to comprehensively regulate animal vaccines by regulating their sale in intrastate commerce as well.²⁷

For decades, addressing influenza has been a bipartisan priority in Congress, such as the 2006 Emergency Supplemental Appropriations to Address Pandemic Influenza allocating millions of dollars toward research operations within the USDA and FDA.²⁸ This act also ordered vaccines and antiviral drugs to be purchased for the National Veterinary Stockpile in response to the mid-2000s outbreak of H5N1 influenza.²⁹ The following year, Congress passed the Pandemic and All-Hazards Preparedness Act, which authorizes the Department of Health and Human Services (HHS) to track the distribution of federally purchased influenza vaccines and establish state-level influenza pandemic preparedness plans.³⁰ Title XII of the Agriculture Improvement Act of 2018 authorized the creation of a National Animal Vaccine and Veterinary Countermeasures Bank “to appropriately and rapidly respond to the most damaging animal diseases affecting or with

default%3Ad44842587ed597e3c2384a6dc2cdfd45&ab_segments=&initiator=&acceptTC=1
[<https://perma.cc/7H6S-Q4KT>].

24. *Estimates of Appropriations for the Fiscal Year Ending June 30, 1914: Hearing on H.R. 28283 Before the H. Comm. On Agric.*, 62nd Cong. 23–24 (1913) (statement of A.M. Farrington, Assistant Chief, Bureau of Animal Indus., Dep’t of Agric.).

25. An Act Making Appropriations for the Department of Agriculture for the Fiscal Year Ending June Thirtieth, Nineteen Hundred and Fourteen, Pub. L. No. 62-430, ch. 145, 37 Stat. 828, 832–33 (1913).

26. 21 U.S.C. § 151.

27. Food Security Act of 1985, Pub. L. No. 99–198, § 1768, 99 Stat. 1354, 1654–56 (1985).

28. Emergency Supplemental Appropriations Act to Address Hurricanes in the Gulf of Mexico and Pandemic Influenza, 2006, Pub. L. No. 109–148, div. B, tit. 2, ch. 5, 119 Stat. 2745, 2782–87 (2005).

29. *Id.*

30. Pandemic and All-Hazards Preparedness Act, Pub. L. No. 109–417, §§ 204, 302, 120 Stat. 2831, 2850–51, 2855–2856 (2006).

potential to affect human health or the economy of the United States.”³¹ However, during a July 2024 webinar hosted by the farm and rural policy organization Agri-Pulse, a USDA representative noted that the agency has not yet stockpiled any H5N1 HPAI vaccines designed for chickens or dairy cattle.³²

As for the statutory authority to inspect the health and safety of livestock products, Progressive Era reformers successfully lobbied for the Federal Meat Inspection Act of 1906,³³ which requires post-mortem examinations “of cattle, sheep, swine, and goats before they” are sold for human consumption.³⁴ However, the poultry meat industry was underdeveloped at this time, such that Congress initially did not include regulation of chickens in its statutory scheme of livestock inspections.³⁵ Ironically, it was infectious disease outbreaks during the 1920s that spurred mid-Atlantic farmers to selectively breed broiler chickens for meat production, as opposed to the traditional model of raising chickens for their eggs.³⁶ In 1957, Congress responded to the growth of the poultry meat industry by passing the Poultry Products Inspection Act to have the USDA’s Food Safety and Inspection Service (FSIS) conduct both ante- and post-mortem inspections of chickens before they can be sold for human consumption.³⁷ The Poultry Products Inspection Act also allows the USDA to refuse meat inspections for products from processing facilities that fail to meet its sanitation requirements, providing the USDA with wide latitude to set these standards.³⁸ The Food and Agriculture Organization of the United Nations has estimated that since 1961, the United States’ production of poultry meat has expanded by 323%, now involving a

31. Agriculture Improvement Act of 2018, Pub. L. No. 115–334, § 12101, 132 Stat. 4490, 4940 (2018).

32. AGRI-PULSE COMMUNICATIONS, INC., *Agri-Pulse Webinar: What Happens When Animal Diseases Cross Boundaries?*, at 19:15 (YouTube, July 12, 2024), <https://youtu.be/wFLgUzXhKrU?si=pteN1laXtx0J6s9B&t=1156> [<https://perma.cc/K46Q-GQZR>].

33. Ilyse D. Barkan, *Industry Invites Regulation: The Passage of the Pure Food and Drug Act of 1906*, 75 AM. J. PUB. HEALTH, 18, 18 (1985).

34. An Act Making Appropriations for the Department of Agriculture for the Fiscal Year Ending June Thirtieth, Nineteen Hundred and Seven, Pub. L. No. 59-382, ch. 3913, 34 Stat. 669, 674–75 (1906).

35. COMM. ON PUB. HEALTH RISK ASSESSMENT OF POULTRY INSPECTION PROGRAMS, NAT’L RSCH. COUNCIL, POULTRY INSPECTION: THE BASIS FOR A RISK-ASSESSMENT APPROACH 12 (1987), <https://www.ncbi.nlm.nih.gov/books/NBK218008> [<https://perma.cc/FA3X-NVZ3>].

36. WILLIAM H. WILLIAMS, DELMARVA’S CHICKEN INDUSTRY: 75 YEARS OF PROGRESS 9 (1998).

37. Poultry Products Inspection Act, Pub. L. No. 85-172, § 6, 71 Stat. 441, 443–44 (1957).

38. *Id.* § 7.

gargantuan annual slaughter of 9.5 billion chickens backed by government safety measures.³⁹

B. Regulatory Authority

Since the 1930s, the USDA's Animal and Plant Health Inspection Service (APHIS) has overseen the National Poultry Improvement Plan (NPIP), a set of standards that farms are incentivized to comply with to receive higher government indemnification rates for disease-affected flocks and meet the contractual requirements of downstream purchasers.⁴⁰ Initially focused on sanitary measures to prevent transmission of *Salmonella pullorum*, the NPIP has since expanded to guide the prevention and diagnosis of many veterinary diseases.⁴¹ While the NPIP includes livestock vaccination as a means for certifying egg- and meat-type chicken breeding flocks as free of *S. enteritidis* and Newcastle disease, its prevention strategies for avian influenza only entail monitoring for antibodies that are not a consequence of vaccination.⁴²

At a minimum, the USDA APHIS should modify the NPIP to utilize livestock vaccination as a means for certifying poultry as free of avian influenza. Beyond the previously mentioned incentives for farms to participate in the NPIP, consumers are also more willing to pay more for healthier food products.⁴³ Thus, farms that voluntarily comply with the NPIP's standards could recover their costs from administering such livestock vaccines by charging higher prices while maintaining similar demand.⁴⁴ However, the USDA should go further by requiring chickens submitted for FSIS ante- and post-mortem inspections to be certified as vaccinated. Whereas the NPIP stimulates compliance by creating branding for disease-free chicken flocks to potentially interested downstream producers of

39. See *Crops and Livestock Products*, FOOD & AGRIC. ORG. OF THE UNITED NATIONS (Feb. 22, 2026, at 13:37 CT), <https://www.fao.org/faostat/en/#data/QCL> [<https://perma.cc/98RS-6MGF>] (select "United States of America" in the Countries box, "Producing Animals/Slaughtered" in the Elements box, "Livestock Primary" then "Meat of Chickens, fresh or chilled" in the Items box, "2024" and "1961" in the Years box; then click the "Show Data").

40. Lukas Schnepel, *The Law and Policy of Avian Influenza: A Coming Shift*, 28 DRAKE J. AGRIC. L. 221, 232–35 (2023).

41. *NVAP Reference Guide: National Poultry Improvement Plan*, U.S. DEP'T OF AGRIC.: ANIMAL & PLANT HEALTH INSPECTION SERV. (Apr. 1, 2024), <https://www.aphis.usda.gov/nvap/reference-guide/poultry/npip> [<https://perma.cc/9J6Y-UUK3>].

42. National Poultry Improvement Plan for Breeding Poultry, 9 C.F.R. §§ 145.73, 145.83 (2026).

43. Moosa Alsubhi et al., *Consumer Willingness to Pay for Healthier Food Products: A Systematic Review*, OBESITY REVS., Jan. 2023, at 1, 2 (2023).

44. See *id.*

chicken-based products, a livestock vaccine mandate would immediately engage FSIS officials as the gatekeepers to interstate markets.⁴⁵

C. Preemption

Based on the United States Supreme Court's interpretation of the Federal Meat Inspection Act as preempting state laws with additional, non-conflicting requirements on slaughterhouse operations,⁴⁶ the Poultry Products Inspection Act's similar preemption clause has come under recent review.⁴⁷ In rejecting express preemption of a California ban on force feeding birds to produce foie gras, the Ninth Circuit has concluded that "Congress made clear that the [Poultry Products Inspection Act's] 'ingredient requirements' address the physical components of poultry products, not the way the animals are raised."⁴⁸ A state livestock vaccination requirement would be unlikely to similarly qualify as working "at a remove from the sites and activities that the FMIA [and PPIA] most directly governs."⁴⁹ This type of state law would also regulate conduct on farms, rather than slaughterhouses, but only insofar as that creates physically different meat from poultry not vaccinated against H5N1 HPAI.⁵⁰

States cannot circumvent this preemption by requiring chicken products to be derived from livestock vaccinated for H5N1 HPAI as a condition of purchase.⁵¹ Thus, the federal government not only possesses the power to condition farmers' entry of chickens into interstate markets on the livestock being vaccinated for H5N1 HPAI, but it is the only level of the American government currently authorized to do so. If the USDA required H5N1 HPAI livestock vaccination as a condition on poultry sales, states could concurrently hold non-compliant farmers liable for false or misleading labeling, but the federal government must act first.⁵²

45. Poultry Products Inspection Act, Pub. L. No. 85-172, § 6(a), 71 Stat. 441, 443 (1957); Schnepel, *supra* note 40, at 232.

46. Nat'l Meat Ass'n v. Harris, 565 U.S. 452, 455 (2012).

47. 21 U.S.C. § 467e; Ass'n des Éleveurs de Canards et d'Oies du Québec v. Becerra, 870 F.3d 1140, 1143 (9th Cir. 2017).

48. Ass'n des Éleveurs, 870 F.3d at 1147.

49. See Nat'l Meat Ass'n, 565 U.S. at 467.

50. *Id.* at 464.

51. *Id.* at 463–64; see Engine Mfrs. Ass'n. v. S. Coast Air Quality Mgmt. Dist., 541 U.S. 246, 255 (2004).

52. See Webb v. Trader Joe's Co., 999 F.3d 1196, 1202–04 (9th Cir. 2021); Brower v. Campbell Soup Co., 243 F. Supp. 3d 1124, 1128–29 (S.D. Cal. 2017); Phelps v. Hormel Foods Corp., 244 F. Supp. 3d 1312, 1317 (S.D. Fla. 2017).

D. Political Economy of Agricultural Regulations

In considering why the USDA has thus far chosen to not exercise its regulatory power by requiring chicken flocks to be certified as free of H5N1 HPAI through vaccination, it is useful to consider how public choice theory explains the political economy of poultry regulation. This field examines the behavior of government actors by applying economic concepts to political science, such as studying how interest groups seek rent from regulatory agencies.⁵³ Formulated by international economist Anne Krueger to explain government corruption, rent seeking describes businesses engaged in regulatory capture to legislate conditions that are economically inefficient but personally profitable.⁵⁴ Public choice theory further proposes that administrative agencies self-constrain their regulatory actions based on their past behaviors to stabilize the rule of law as a form of path dependence.⁵⁵ However, as Justice Oliver Wendell Holmes Jr. once remarked:

It is revolting to have no better reason for a rule of law than that so it was laid down in the time of Henry IV. It is still more revolting if the grounds upon which it was laid down have vanished long since, and the rule simply persists from blind imitation of the past.⁵⁶

Thus, administrative agencies must ensure that path dependence does not guide them toward ineffective regulations prioritizing tradition over effectiveness.

After agricultural lobbying groups pressured Congress to pass the Organic Foods Production Act of 1990,⁵⁷ the USDA was forced to establish its National Organic Program to regulate use of the “USDA Organic” seal.⁵⁸ Despite then-Secretary of Agriculture Dan Glickman’s efforts to communicate that organic foods are not necessarily safer, more nutritious, or higher-quality, rent-seeking businesses promoted the USDA designation as a government-backed seal of approval.⁵⁹ The National Organic Program has progressively broadened the scope

53. Anne O. Krueger, *The Political Economy of the Rent-Seeking Society*, 64 AM. ECON. REV. 291, 302 (1974).

54. *Id.*

55. Oona A. Hathaway, *Path Dependence in the Law: The Course and Pattern of Legal Change in a Common Law System*, 86 IOWA L. REV. 101, 103 (2001).

56. Oliver Wendell Holmes Jr., *The Path of the Law*, 10 HARV. L. REV. 457, 469 (1897).

57. Organic Foods Production Act of 1990, Pub. L. 101-624, 104 Stat. 3935 (1990); see Colin Fristoe, *Health, Sustainability, and the Political Economy of Food Labeling*, 38 CATO J. 185 (2018).

58. Fristoe, *supra* note 57, at 186.

59. *Id.*; Press Release, U.S. Dep’t of Agric., National Organic Standards Remarks as Prepared for Delivery by Secretary of Agriculture Dan Glickman (Mar. 7, 2000),

of its qualifying criteria to follow public opinion, such as coming to reject genetic modifications and food irradiation, despite a lack of scientific evidence to oppose either technique.⁶⁰ Thus, one explanation for the USDA's reticence to regulating in this space is that if it begins requiring poultry farms to be free of certain animal diseases through vaccination, such guidelines may be hijacked in economically and politically unproductive ways, such as requiring farms to prevent an infeasible number of animal diseases.

The USDA has already identified highly effective vaccines for immunizing chickens against H5N1 HPAI and stockpiled such vaccines during a 2014–2015 outbreak across American farms, highlighting the existence of regulatory power currently going underused.⁶¹ In an April 2024 report, the USDA claimed that its Agricultural Research Service had begun testing candidate H5N1 HPAI poultry vaccines in 2023, finding that a two-dose regimen was sufficient to confer near-complete clinical protection.⁶² However, USDA has repeatedly declined to exercise its authority to produce and distribute poultry vaccines against the H5 subtype of Influenza A during outbreaks, despite the USDA APHIS's July 1995 Memo No. 565.12 authorizing such action.⁶³ The USDA's January 2016 policy on H5N1 HPAI vaccination states that it will only pay the costs of procuring animal vaccines requested by state veterinarians and will not handle any of the logistics of distribution to individual farms.⁶⁴ This reticence reflects USDA's history of only

https://www.iatp.org/sites/default/files/National_Organic_Standards_Remarks.htm
[<https://perma.cc/799W-QUKB>].

60. Fanny Rollin, Jean Kennedy & Josephine Wills, *Consumers and New Food Technologies*, 22 *TRENDS FOOD SCI. & TECH.* 99, 104 (2011); Fristoe, *supra* note 57, at 188.

61. ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., FINAL REPORT FOR THE 2014–2015 OUTBREAK OF HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) IN THE UNITED STATES 46 (2016), <https://www.aphis.usda.gov/media/document/2086/file> [<https://perma.cc/N2RT-KYWF>].

62. ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., DETECTION OF HIGHLY PATHOGENIC AVIAN INFLUENZA (H5N1) IN DAIRY HERDS: FREQUENTLY ASKED QUESTIONS 5 (2024), https://agriculture.delaware.gov/wp-content/uploads/sites/108/2024/04/hpai-dairy-faqs_updated-4.16.24.pdf [<https://perma.cc/39VW-R9S4>].

63. Memorandum from Donald W. Luchsinger, Acting Deputy Administrator, to State Veterinarians on Animal and Plant Health Inspection Service (APHIS) Policy Change on H5 and H7 Avian Influenza (AI) (July 24, 1995), <https://www.aphis.usda.gov/sites/default/files/aphis-policy-h5-h7-avianflu-565.12.pdf> [<https://perma.cc/S9QC-7FQA>].

64. U.S. DEP'T OF AGRIC., POLICY AND APPROACH TO HPAI VACCINATION 1 (2016), <https://www.aphis.usda.gov/media/document/306/file> [<https://perma.cc/7ZZM-BKTX>].

providing poultry influenza vaccines in response to farmers' requests during 1970s outbreaks in California and Minnesota.⁶⁵

In sum, the USDA has the statutory authority to stockpile livestock vaccines as countermeasures against animal diseases with the potential to affect human health and the national economy.⁶⁶ Thus far, the agency has declined to clarify and modify its existing regulatory framework to mandate H5N1 vaccination for poultry, seemingly due to concerns about rent-seeking businesses and path-dependent governance predicted by public choice theory.⁶⁷ However, given the significant threat posed by H5N1 HPAI and the availability of highly effective livestock vaccines, the USDA must rise above its fears of rent-seeking by recognizing its competence in establishing the National Animal Vaccine and Veterinary Countermeasures Bank.⁶⁸ Noting that a “growing mismatch between market opportunities and institutions may result in crises or an institutional breakdown,” the USDA must overcome its path dependence on a historical model of only providing livestock vaccines to farmers that voluntarily request them.⁶⁹ Current agricultural and scientific conditions necessitate a compulsory livestock vaccination campaign to meet the threat of this rapidly expanding outbreak.⁷⁰

III. CONSIDERATIONS FOR COMPULSORY POULTRY VACCINATION

Requiring H5N1 HPAI vaccination as a threshold for poultry to enter interstate markets has merit but will likely attract challenges based on its economic and legal impacts.⁷¹ A vaccine mandate for American livestock primarily raises international trade and property law concerns, particularly for the farm owners in

65. David E. Swayne & Darrell R. Kapczynski, *Chapter 19: Vaccines, Vaccination, and Immunology for Avian Influenza Viruses in Poultry*, in AVIAN INFLUENZA 407–08 (David E. Swayne, ed., 2008).

66. Memorandum from John H. Payne, Ph.D., to Veterinary Biologics Licensees, Permittees, and Applicants, on Avian Influenza Vaccines (July 25, 1995) <https://www.aphis.usda.gov/sites/default/files/aphis-policy-h5-h7-avianflu-565.12.pdf> [<https://perma.cc/S9QC-7FQA>].

67. See Cohen, *supra* note 9, at 24, 27.

68. See Agriculture Improvement Act of 2018, Pub. L. No. 115-334, § 12101, 132 Stat. 4490, 4940.

69. Lena Andersson-Skog, *Revisiting Railway History: The Case of Institutional Change and Path Dependence*, in THE EVOLUTION OF PATH DEPENDENCE 70, 78 (Lars Magnusson & Jan Ottosson eds., 2009).

70. See *supra* Part I.

71. Lisa Schnirring, *USDA Rolls Out 5-Step Plan to Battle Avian Flu in Poultry*, UNIV. OF MINN.: CIDRAP (Feb. 26, 2025), <https://www.cidrap.umn.edu/avian-influenza-bird-flu/usda-rolls-out-5-step-plan-battle-avian-flu-poultry> [<https://perma.cc/N4ZN-4ZYJ>].

possession of the chickens that would be subject to this regulation.⁷² In its Foreign Animal Disease Preparedness & Response Plan against H5N1 HPAI, the USDA explicitly notes that it will reject vaccination as an outbreak response strategy until it becomes acceptable to farmers.⁷³ Farms have grown accustomed to the historical model of self-assessing sick chickens within their flocks to remove such livestock before they enter interstate commerce and have lobbied for trade agreements to be structured accordingly.⁷⁴ However, modern molecular testing methods for diseases like H5N1 HPAI operate with higher accuracy and therefore make this framework outdated. For example, nucleoprotein-based Enzyme Linked Immunosorbent Assays (NP-ELISA) can identify vaccinated chickens with active H5N1 HPAI infections with 75% sensitivity and 79.5% specificity within two weeks of the livestock being exposed to the virus.⁷⁵

A. International Trade Concerns

While countries like Mexico and China have already demonstrated success with using mass livestock vaccination campaigns to address past influenza outbreaks among farm chicken flocks, the European Union and the United States have historically opposed such measures.⁷⁶ The counterargument, frequently raised by the National Chicken Council trade association, is that whereas unvaccinated chickens will showcase visible symptoms when infected with H5N1 HPAI, a chicken with immunity acquired from vaccination may appear healthy while internally combatting the virus.⁷⁷ However, given that other countries have already begun vaccinating their livestock against H5N1 HPAI without facing restrictions on their international meat exports, these fears seem unfounded.⁷⁸ Mexico and China's acceptance of livestock vaccination is particularly relevant, given that these countries are two of the largest importers of American poultry

72. *See id.*

73. ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., HIGHLY PATHOGENIC AVIAN INFLUENZA RESPONSE PLAN: THE RED BOOK 5-47 to -50 (2017).

74. Jess Craig, *Why Aren't We Vaccinating Birds Against Bird Flu?*, VOX (May 14, 2024, at 06:00 CT), <https://www.vox.com/future-perfect/24155545/bird-flu-vaccines-h5n1-avian-flu-cows>.

75. Søren Saxmose Nielsen et al., *Vaccination of Poultry Against Highly Pathogenic Avian Influenza – Part 2. Surveillance and Mitigation Measures*, EFSA J., Mar. 25, 2024, at 1, 42.

76. Cohen, *supra* note 9, at 26.

77. *Id.* at 27.

78. *Id.*

products.⁷⁹ Additionally, both nations currently accept USDA-approved poultry meat without further testing unless its state of origin is actively experiencing an H5N1 HPAI outbreak, showcasing international trust in American food safety standards.⁸⁰

Former President of the USA Poultry and Egg Export Council James Sumner recently claimed that foreign countries would be encouraged to reject vaccinated poultry from the United States to retaliate against American farms for dumping their leg quarters onto foreign markets at low prices that undercut their intranational farms.⁸¹ Such international trade concerns must be taken seriously, given that European Union and United Kingdom food safety standards already prevent most American meat from entering their markets, limiting options for farms in the United States to diversify their international customers.⁸² However, the General Agreement on Tariffs and Trade, which governs approximately 98% of international trade,⁸³ only allows countries to retaliate against dumping by imposing tariffs to equalize the cost of those goods with the domestic price.⁸⁴ Thus, American farms might lose their international pricing advantage in selling leg quarters, but they would not be wholly prevented from selling poultry.⁸⁵ Furthermore, the World Organization for Animal Health's Terrestrial Animal Health Code, which is recognized by the World Trade Organization as an authoritative guide for veterinary public health,⁸⁶ advises vaccination of poultry

79. *U.S. Poultry Meat & Prods. (Excl. Eggs) Exports in 2025*, U.S. DEP'T OF AGRIC.: FOREIGN AGRIC. SERV (Feb. 22, 2026, at 16:40 CT), <https://fas.usda.gov/data/commodities/poultry-meat-prods-ex-eggs> [<https://perma.cc/UJ3V-JC82>].

80. *Export Animal Products to Mexico*, U.S. DEP'T OF AGRIC.: ANIMAL & PLANT HEALTH INSPECTION SERV. (Apr. 1, 2026), <https://www.aphis.usda.gov/animal-product-export/export-animal-products-mexico> [<https://perma.cc/B6CD-HU4U>]; *Export Animal Products to China*, U.S. DEP'T OF AGRIC.: ANIMAL & PLANT HEALTH INSPECTION SERV. (Apr. 13, 2026), <https://www.aphis.usda.gov/animal-product-export/export-animal-products-china> [<https://perma.cc/Z7RC-BV4Y>].

81. Cohen, *supra* note 9, at 27.

82. See Jeanna Smialek, *Why America's 'Beautiful Beef' Is a Trade War Sore Point for Europe*, N.Y. TIMES (May 11, 2025), <https://www.nytimes.com/2025/05/11/world/europe/tariffs-farm-products-beef-meat-european-union-trump.html>.

83. James Bacchus, *Another Misguided US Attack on the World Trade Organization*, CATO INST.: CATO AT LIBERTY (Mar. 28, 2025, at 10:05 CT), <https://www.cato.org/blog/another-misguided-us-attack-world-trade-organization> [<https://perma.cc/K7S2-U2RH>].

84. General Agreement on Tariffs and Trade art. VI, Oct. 30, 1947, 61 Stat. A11, A23, 55 U.N.T.S. 194, 212.

85. *Id.*

86. Agreement on the Application of Sanitary and Phytosanitary Measures Annex A, Apr. 15, 1994, 1867 U.N.T.S. 493; Marrakesh Agreement Establishing the World Trade Organization Annex 1A, Apr. 15, 1994, 1867 U.N.T.S. 493.

for H5N1 HPAI when stamping-out policies are ineffective.⁸⁷ Citing this lack of formal trade barriers, the International Egg Commission has urged countries to adopt mass H5N1 HPAI poultry vaccination programs as a cost-effective disease control strategy.⁸⁸

B. Takings and Commerce Clause Challenges

While the federal government has an interest in vaccinating all chickens across American farms to significantly limit the spread of H5N1 HPAI, the Fifth Amendment's Takings Clause would restrain regulations that modify the property rights of farm owners. This clause dictates that "nor shall private property be taken for public use, without just compensation."⁸⁹ Rather than quantifying "just compensation" for this modification of farm owners' property rights, the federal government should instead proceed by requiring animal vaccination for those seeking to enter their chickens into markets of interstate commerce. Since more than 99% of the chickens slaughtered in the United States are submitted for federal inspection, this approach would ensure that virtually all farmed chickens are covered by a mass livestock vaccination campaign.⁹⁰

While Takings Clause case law mostly focuses on compensation for government seizures of privately owned real estate property through eminent domain, the Supreme Court has recognized "regulatory takings" that diminish the value of private property.⁹¹ In *Horne v. Department of Agriculture*, the Supreme Court held that the USDA could not condition raisin growers' entry into interstate markets on contributing a portion of their harvest to the National Raisin Reserve without just compensation.⁹² In the majority, Chief Justice John Roberts opined that "[s]elling produce in interstate commerce, although certainly subject to

87. World Organization for Animal Health, Terrestrial Animal Health Code ch.10.4, *Infection with High Pathogenicity Avian Influenza Viruses* (2026), https://www.woah.org/fileadmin/Home/eng/Health_standards/tahc/2021/en_chapitre_avian_influenza_viruses.htm [<https://perma.cc/P76P-YENG>].

88. INT'L EGG COMM'N, HIGH PATHOGENICITY AVIAN INFLUENZA IN LAYERS: CONSIDERATIONS AND ESSENTIAL COMPONENTS FOR VACCINATION AND SURVEILLANCE 3 (2023), <https://www.worldeggorganisation.com/app/uploads/2023/04/AI-Vaccination-Surveillance-Document-April-2023-Digital-low-res.pdf> [<https://perma.cc/3Z2W-SU42>] (the International Egg Commission changed its name to the World Egg Organization in 2025).

89. U.S. CONST. amend. V.

90. *Surveys: Poultry Slaughter*, U.S. DEP'T OF AGRIC.: NAT'L AGRIC. STAT. SERV. (Nov. 20, 2025), https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Poultry_Slaughter/index.php [<https://perma.cc/79SS-PHXW>].

91. See James G. Hodge, Jr. & Megan Scanlon, *The Legal Anatomy of Product Bans to Protect the Public's Health*, 23 ANNALS HEALTH L. 20, 35 (2014).

92. *Horne v. Dep't of Agric.*, 576 U.S. 350, 352 (2015).

reasonable government regulation, is similarly not a special governmental benefit that the government may hold hostage, to be ransomed by the waiver of constitutional protection.”⁹³ However, interpreting *Horne* as prohibiting the USDA from conditioning farmers’ entry of chickens into interstate markets on the livestock being vaccinated for H5N1 HPAI would be incorrect for two reasons.

First, in *Horne*, the Supreme Court focused on distinguishing its ruling from *Ruckelshaus v. Monsanto Co.*, which allowed the EPA to publicly disclose health, safety, and environmental data on pesticides submitted for approval, despite the associated divulgement of corporate trade secrets.⁹⁴ In *Ruckelshaus*, the Supreme Court denied a Takings Clause challenge against the EPA, claiming that as long as the affected entities were made aware of the conditions for public disclosure and those conditions satisfied rational basis review, “a voluntary submission of data in exchange for the economic advantages of a registration can hardly be called a taking.”⁹⁵ To sustain a Takings Clause challenge in *Horne*, the Supreme Court distinguished the healthiness of raisins from the risks posed by pesticides.⁹⁶ Thus, requiring chickens to be vaccinated against H5N1 HPAI to enter interstate commerce amid an ongoing infectious disease outbreak would likely be upheld.

Second, the agricultural regulation considered in *Horne* required a portion of farmers’ harvest to be diverted toward a government stockpile, which is analogous to the seizure of real estate through eminent domain.⁹⁷ In comparison, requiring chickens to be vaccinated for H5N1 HPAI before entering interstate markets only expands the scope of existing product health and safety regulations for chicken-based goods. Applying the Supreme Court’s diminution-of-value test for regulatory takings, as established in *Pennsylvania Coal Co. v. Mahon*,⁹⁸ courts have generally held that health and safety regulations, such as prohibiting private businesses from allowing public smoking, do not destroy the economic value of their property.⁹⁹ Thus, farmers would likely be unsuccessful if they challenged a USDA policy conditioning entry of chicken-based goods to interstate markets on animal vaccination under the Takings Clause because such a requirement would not eliminate the economic value of their farmland and livestock. A livestock

93. *Id.* at 366.

94. *Id.* at 365–66; *see Ruckelshaus v. Monsanto Co.*, 467 U.S. 986 (1984).

95. *Ruckelshaus*, 467 U.S. at 987.

96. *Horne*, 576 U.S. at 366.

97. *Id.* at 362.

98. *Pa. Coal Co. v. Mahon*, 260 U.S. 393, 419 (1922).

99. *City of Tucson v. Grezaffi*, 23 P.3d 675, 684 (Ariz. Ct. App. 2001); Hodge & Scanlon, *supra* note 91, at 35.

vaccination requirement would instead act alongside existing USDA poultry product standards to reject livestock emerging from unsanitary establishments.

The federal government has never attempted to impose a vaccine mandate on American livestock,¹⁰⁰ instead focusing on USDA FSIS ante- and post-mortem examinations of whether the animal being proposed for sale in interstate markets is free of disease.¹⁰¹ While the federal government's authority to set a livestock vaccine mandate under the Commerce Clause has therefore gone untested, the Supreme Court's decision in *National Federation of Independent Business v. OSHA* suggests that it likely possesses this power.¹⁰² In that case, the Supreme Court only struck down a federal vaccine mandate affecting large private companies on the basis that it exceeded the statutory provisions of the Occupational Safety and Health Act.¹⁰³ While the *per curiam* opinion did not address the constitutional Commerce Clause claim, the three-member dissent argued that a vaccine mandate for employers to hire and retain human workers during a global pandemic was sufficiently related to "mandatory occupational safety and health standards applicable to businesses affecting interstate commerce."¹⁰⁴ Thus, pursuant to the Poultry Products Inspection Act, the USDA could order that livestock be vaccinated as a minimum standard for their agricultural products to enter interstate commerce.¹⁰⁵

C. Industry Views on H5N1 Influenza Vaccination

To assess the political feasibility of the USDA requiring chickens to be vaccinated against H5N1 HPAI before they can enter interstate commerce, the attitudes of major industry groups can be used as a helpful proxy for the opinions of individual farms. Industry groups have historically been significant drivers of USDA-led livestock vaccine development.¹⁰⁶ For example, during the 1980s, the National Cattlemen's Beef Association successfully pressured Congress to eradicate brucellosis in American cattle by having the USDA develop more effective livestock vaccines.¹⁰⁷ Additionally, when the Missouri House of

100. Abramson et al., *supra* note 20, at 18-11 to 18-12.

101. Poultry Products Inspection Act, Pub. L. No. 85-172, § 4(g)(2)-(3), 71 Stat. 441, 442 (1957).

102. Nat'l Fed'n of Indep. Bus. v. Dep't of Lab., Occupational Safety & Health Admin., 595 U.S. 109, 120 (2022).

103. *Id.*

104. *See id.* at 128-36 (Breyer, J., dissenting) (construing the Occupational Safety and Health Act of 1970 § 2(b)(3), 29 U.S.C. § 651(b)(3)).

105. *See supra* Part II.

106. CHEVILLE, *supra* note 23, at 216-23.

107. *Id.* at 222.

Representatives considered a 2023 bill to require beef products derived from intrastate cattle to label which vaccines the livestock received, the state Cattlemen's Association, Soybean Association, Corn Growers Association, Pork Producers, Farm Bureau, and Chamber of Commerce successfully opposed the legislation as anti-scientific.¹⁰⁸

In September 2024, the United States Poultry & Egg Association's requested proposals for research on H5N1 HPAI, including how to reduce its spread within commercial facilities without vaccination, displaying an unwillingness to change.¹⁰⁹ In comparison, the International Dairy Foods Association, National Milk Producers Federation, United Egg Producers, and National Turkey Federation sent then-Secretary of Agriculture Tom Vilsack a joint letter in August 2024 seeking USDA development of a vaccine against H5 subtypes of Influenza A that can be used for dairy cows, turkeys, and egg-laying hens.¹¹⁰ Similarly, the USA Poultry & Egg Export Council's Q3 2024 report expressed a willingness to vaccinate farm chickens for H5N1 HPAI if the USDA could avoid reductions in international trade.¹¹¹ Recognizing rising industry support for animal vaccination, the House Committee on Agriculture sent Secretary Vilsack another letter in late August 2024 urging the USDA to develop and deploy a mass-use animal vaccine while balancing American trade interests.¹¹²

D. Federal Vaccine Policy

Industry groups are increasingly expressing their support for the federal government to combat H5N1 HPAI through a mass livestock vaccination campaign, especially if the USDA is willing to bear the costs of vaccine

108. Todd Neeley, *Missouri Gene Therapy Bill Voted Down*, W. LIVESTOCK J. (Apr. 28, 2023), <https://www.wlj.net/missouri-gene-therapy-bill-voted-down/> [<https://perma.cc/CE74-Y5LZ>].

109. Press Release, U.S. Poultry & Egg Ass'n, USPOULTRY, Accepting Board Research Initiative Preproposals on Further Understanding Highly Pathogenic Avian Influenza, Sep. 18, 2024, <https://www.poultryfoundation.org/news/releaseSavePDF.cfm?pid=E4DBDE6E58BD96476B27B196FD3F6814> [<https://perma.cc/L3Y3-X84W>].

110. Letter from Michael Dykes et al., to Thomas Vilsack, U.S. Sec'y. of Agric. (Aug. 16, 2024), https://www.idfa.org/wordpress/wp-content/uploads/2024/08/H5N1-Vaccines_Letter-to-Secretary-Vilsack_8.16.24_Final.pdf [<https://perma.cc/Z29X-3YDV>].

111. USAPEEC, *CEO Update Video August 2024*, at 05:14 (YouTube, Aug. 23, 2024), <https://www.youtube.com/watch?v=6ho5jRnbC4Y> [<https://perma.cc/3WFB-G4U6>].

112. Press Release, Randy Feenstra, U.S. Rep., Feenstra Calls on USDA to Launch Strategic Initiative to Combat Highly Pathogenic Avian Influenza (HPAI) (Aug. 19, 2024), <http://feenstra.house.gov/media/press-releases/feenstra-calls-usda-launch-strategic-initiative-combat-highly-pathogenic-avian> [<https://perma.cc/Z3HN-SSY7>].

procurement and distribution to state veterinarians.¹¹³ However, beyond the previously considered political economy of agricultural regulation, the broader partisan divides on health and agricultural policy must be considered.

During the second presidential transition of Donald Trump, then-Secretary of Agriculture Vilsack lamented that his successor, Brooke Rollins, declined to coordinate a handoff of the federal response to H5N1 HPAI,¹¹⁴ while the National Farmers Union remained positive that her rural upbringing would ensure some level of competence.¹¹⁵ Additionally, journalists noted that the initial nominees for CDC Director and Secretary of HHS, Dave Weldon and Robert F. Kennedy, Jr., respectively, were both anti-vaccine activists that could hinder the development and distribution of H5N1 HPAI vaccines.¹¹⁶ After Weldon's nomination was withdrawn over those views, microbiologist Susan Monarez was confirmed instead.¹¹⁷ However, she was removed in August 2025 due to disagreement over federal vaccine policy, and no replacement was nominated until April 2026.¹¹⁸

During his 2024 presidential campaign, Kennedy claimed that avian influenza strains capable of human-to-human transmission would be most likely

113. Noah Rohlfing, *Ag Organizations React to Changes in USDA Bird Flu Strategy*, SUCCESSFUL FARMING (Feb. 26, 2025), <https://www.agriculture.com/ag-organizations-react-to-changes-in-usda-bird-flu-strategy-11687313> [<https://perma.cc/7724-Q3FU>].

114. Marcia Brown, *Trump's Pick to Lead USDA Hasn't Returned Vilsack's Call*, POLITICO (Dec. 13, 2024, at 12:28 ET), <https://www.politico.com/live-updates/2024/12/13/congress/rollins-ghosts-vilsack-00194259> [<https://perma.cc/7Z3N-W8W9>].

115. *NFU Statement on Nomination of Brooke Rollins as Secretary of Agriculture*, NAT'L FARMERS UNION (Nov. 23, 2024), <https://nfu.org/2024/11/23/nfu-statement-on-nomination-of-brooke-rollins-as-secretary-of-agriculture/> [<https://perma.cc/Z8UB-FRWV>].

116. Berkeley Lovelace Jr., *Biden Administration Has No Current Plans to Authorize a Bird Flu Vaccine for Humans*, NBC NEWS (Dec. 30, 2024, at 15:01 CT), <https://www.nbcnews.com/health/health-news/biden-administration-no-current-plans-authorize-bird-flu-vaccine-human-rcna183848> [<https://perma.cc/UX3L-M6FE>]; Artis Curiskis, *Avian Flu Could Define Trump's Second Presidency*, MOTHER JONES (Dec. 5, 2024), <https://www.motherjones.com/politics/2024/12/trump-bird-flu-covid-response/> [<https://perma.cc/3U26-EW5X>].

117. Sophie Gardner, David Lim & Megan Messerly, *Monarez Officially Out at CDC After Battle With HHS*, POLITICO (Aug. 27, 2025, at 22:38 ET), <https://www.politico.com/news/2025/08/27/hhs-monarez-no-longer-director-of-cdc-00532488> [<https://perma.cc/6EAT-DXA2>].

118. *Id.*; Apoorva Mandavilli, *Trump to Nominate Doctor Who Has Publicly Supported Vaccines as C.D.C. Director*, N.Y. TIMES (April 16, 2026), <https://www.nytimes.com/2026/04/16/health/erica-schwartz-cdc-director-trump.html>.

to arise from bioweapons developed through gain-of-function research and accused existing avian influenza vaccines of being unsafe for humans.¹¹⁹

Having remarked in 2023 that “[t]here is no vaccine that is safe and effective,” Kennedy has used his authority as Secretary of HHS to dismiss the full Advisory Committee on Immunization Practices and replace its members with vaccine skeptics, shaping its guidance on civilian vaccination to match his own.¹²⁰ After Jay Bhattacharya, the Director of the National Institutes of Health, recently defended the abandonment of mRNA vaccine development with lofty rhetoric of rebuilding public trust,¹²¹ both Bobby Mukkamala, the President of the American Medical Association, and Jerome Adams, the United States Surgeon General during the first Trump Administration, condemned the disinvestment in innovative biotechnology.¹²² Beyond their changes to civilian vaccine policy, Kennedy and Bhattacharya have hindered the federal response to avian influenza by cancelling expert panels, interagency meetings, and news briefings.¹²³

At the USDA, Secretary Rollins began her tenure with a five-pronged plan to combat avian influenza by investing up to \$500 million on farm biosecurity, up to \$400 million on relief to affected farms, and up to \$100 million on vaccine development, as well as coordinating with the FDA and modifying trade policy.¹²⁴ These plans were supported by the American Farm Bureau Federation, National

119. Robert F. Kennedy Jr. (@RobertKennedyJr), X, *Bird Flu—The Bioweapons Connection* (June 23, 2024, at 12:04 CT), <https://x.com/RobertKennedyJr/status/1804923391595696553> [<https://perma.cc/J7DF-84QS>].

120. Gabe Whisnant & Sonam Sheth, *RFK Jr. Faces New Lawsuit from Top Medical Groups: ‘Existential Threat’*, NEWSWEEK (July 7, 2025, at 19:34 ET), <https://www.newsweek.com/robert-f-kennedy-trump-vaccine-lawsuit-medical-groups-2095609> [<https://perma.cc/64FY-96J3>].

121. Jay Bhattacharya, *Why the NIH Is Pivoting Away from mRNA Vaccines*, WASH. POST (Aug. 12, 2025), <https://www.washingtonpost.com/opinions/2025/08/12/nih-mrna-vaccines-jay-bhattacharya/>.

122. Bobby Mukkamala, *AMA President: NIH Is Wrong to Pivot from mRNA Vaccines*, WASH. POST (Aug. 14, 2025), <https://www.washingtonpost.com/opinions/2025/08/14/ama-bhattacharya-nih-trump-mrna-vaccines-ama/>; Jerome Adams, *I Witnessed Operation Warp Speed. Trump’s Refusal to Defend It Is Baffling.*, WASH. POST (Aug. 15, 2025), <https://www.washingtonpost.com/opinions/2025/08/15/covid-bhattacharya-mrna-vaccines-nih/>.

123. Apoorva Mandavilli, *Upheaval in Washington Hinders Campaign Against Bird Flu*, N.Y. TIMES (May 1, 2025), <https://www.nytimes.com/2025/05/01/health/bird-flu-farms-usda.html>.

124. *USDA Invests Up To \$1 Billion to Combat Avian Flu and Reduce Egg Prices*, U.S. DEP’T. OF AGRIC. (Feb. 26, 2025), <https://www.usda.gov/about-usda/news/press-releases/2025/02/26/usda-invests-1-billion-combat-avian-flu-and-reduce-egg-prices> [<https://perma.cc/NGV7-PUAJ>].

Milk Producers Federation, International Dairy Foods Association, and National Association of State Departments of Agriculture, while the National Chicken Council and Congressional Chicken Caucus maintained their opposition to livestock vaccination based on international trade concerns.¹²⁵ In April 2025, the USDA conditionally approved an H5N1 avian influenza poultry vaccine,¹²⁶ relying on emergency authority granted by the Food Security Act of 1985.¹²⁷ However, it cancelled a contract worth over \$700 million for the drugmaker Moderna to develop an H5N1 HPAI vaccine for humans because it utilized mRNA biotechnology.¹²⁸ Furthermore, Rollins allowed the Department of Government Efficiency to enact such severe layoffs that many FSIS employees overseeing the federal response to H5N1 HPAI had to be quickly rehired.¹²⁹

Prior federal statutes, such as the Pandemic and All-Hazards Preparedness Act, have coupled the USDA and HHS in responding to biological threats affecting both livestock and humans.¹³⁰ Thus, the Cabinet members of the second Trump Administration must be united in any compulsory livestock vaccination campaign for an effective rollout. Instead, Kennedy and Rollins have mused about letting H5N1 HPAI spread unchecked for evolutionary pressure to select poultry immune to the virus, much to the dismay of public health experts.¹³¹ While the second

125. Rohlffing, *supra* note 113; Jen Christensen, *Could Bird Flu Vaccines Help Tackle High Egg Prices? Experts Say It's Not So Simple*, CNN (Feb. 25, 2025, at 16:49 ET), <https://www.cnn.com/2025/02/25/health/bird-flu-chicken-vaccines> [<https://perma.cc/TA9S-XWD8>].

126. Andrew Marshall, *USDA Conditionally Approves H5N1 Poultry Vaccine*, 43 NATURE BIOTECHNOLOGY 455, 461 (2025).

127. 21 U.S.C. § 154a.

128. Apoorva Mandavilli, *U.S. Cancels Contract with Moderna to Develop Bird Flu Vaccine*, N.Y. TIMES (May 29, 2025), <https://www.nytimes.com/2025/05/29/health/moderna-trump-bird-flu-vaccine-contract.html>; Keith H. Hirokawa, Cinnamon Carlarne Hirokawa & Lauren A. VanWagoner, *The Inevitability of Local Environmental Law*, 36 FORDHAM ENV'T L. REV. 218, 227 (2025).

129. Allan Smith, Melanie Zanona & Laura Strickler, *USDA Says It Accidentally Fired Officials Working on Bird Flu and Is Now Trying to Rehire Them*, NBC NEWS (Feb. 18, 2025, at 17:31 CT), <https://www.nbcnews.com/politics/doge/usda-accidentally-fired-officials-bird-flu-rehire-rcna192716> [<https://perma.cc/A6X6-LEBS>]; Megan Cerullo, *USDA Says It Is Trying to Rehire Bird Flu Experts the Agency Accidentally Fired*, CBS NEWS (Feb. 19, 2025, at 12:08 ET), <https://www.cbsnews.com/news/usda-accidentally-fired-bird-flu-experts-rehire/> [<https://perma.cc/V8LG-H65M>].

130. See Pandemic and All-Hazards Preparedness Act, Pub. L. No. 109-417, § 205, 120 Stat. 2831, 2851 (2006).

131. Apoorva Mandavilli, *Kennedy's Alarming Prescription for Bird Flu on Poultry Farms*, N.Y. TIMES (Mar. 18, 2025), <https://www.nytimes.com/2025/03/18/health/kennedy-bird-flu.html>.

Trump Administration has thus far settled for antitrust investigations of egg producers and offers to import eggs from other nations,¹³² it should face this biological threat head-on with comprehensive livestock vaccination to protect American farmers and the broader food supply.

IV. CONCLUSION

As of April 18, 2026, H5N1 HPAI has infected 71 humans,¹³³ 1,093 dairy herds,¹³⁴ and a staggering 206 million chickens across the United States amid the ongoing outbreak.¹³⁵ Devastating farms in all 50 states and Puerto Rico, this outbreak must be addressed through strong public health controls from the USDA, but the agency's current approach of reactively culling chicken flocks with detected infections has been woefully insufficient.¹³⁶ Having developed multiple highly effective poultry vaccines against H5N1 HPAI, the USDA must respond by imposing regulations that will ensure widespread uptake across American chicken flocks.¹³⁷ Congress has clearly empowered the USDA with statutory authority to set health and safety regulations for American livestock,¹³⁸ and the agency has established farm and poultry inspection procedures that could be modified to support a mass animal vaccination campaign.¹³⁹ While the USDA has thus far underutilized its authority, seemingly based on the political economy of agricultural regulations, the international trade concerns often cited by industry groups appear to be largely unfounded.¹⁴⁰ Given that a compulsory livestock vaccination campaign appears capable of surviving constitutional review if

132. Hirsch, Kaye & Creswell, *supra* note 14; *US Egg Shortage Won't Be Solved by Finland*, YLE (Mar. 17, 2025, at 18:41 CT), <https://yle.fi/a/74-20149786> [<https://perma.cc/8DDH-8FHD>].

133. *A(H5) Bird Flu: Current Situation*, U.S. CTRS. FOR DISEASE CONTROL & PREVENTION (Mar. 6, 2026), <https://www.cdc.gov/bird-flu/situation-summary/index.html> [<https://perma.cc/3MTE-FVP2>].

134. *HPAI Confirmed Cases in Livestock*, U.S. DEP'T OF AGRIC. (Mar. 13, 2026), <https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/hpai-confirmed-cases-livestock> [<https://perma.cc/7REZ-LACW>].

135. *Confirmations of Highly Pathogenic Avian Influenza in Commercial and Backyard Flocks*, U.S. DEP'T OF AGRIC. (Apr. 20, 2026, at 19:41 CT), <https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/commercial-backyard-flocks> [<https://perma.cc/9S6V-EX52>].

136. *USDA Reported H5N1 Bird Flu Detections in Poultry*, *supra* note 12.

137. ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., *supra* note 62.

138. Poultry Products Inspection Act, Pub. L. No. 85-172, § 6(a), 71 Stat. 441, 443 (1957).

139. Control of H5/H7 Low Pathogenic Avian Influenza, 9 C.F.R. § 56 (2026).

140. Craig, *supra* note 74.

administered as part of the standards for poultry meat to enter interstate commerce,¹⁴¹ the USDA should proceed with this highly effective approach,¹⁴² which industry groups appear increasingly likely to support.¹⁴³

141. Hodge & Scanlon, *supra* note 91, at 31.

142. Nielsen et al., *supra* note 18, at 61.

143. Letter from Michael Dykes et al., to Thomas Vilsack, *supra* note 110.