

IN THE SUPREME COURT OF APPEALS
OF WEST VIRGINIA

West Virginia Board of Education, Nancy J. White, in her capacity as President of the Board of Education, Victor Gabriel, F. Scott Rotruck, L. Paul Hardesty, Robert W. Dunlevy, Christopher Stansbury, Deborah Sullivan, Gregory Wooten, Sarah Armstrong Tucker, and Cathy Justice all in their capacities as members of the West Virginia Board of Education, Michelle Blatt, in her official capacity as State Superintendent of Schools, Raleigh County Board of Education, Larry Ford, Richard Snuffer, Charlotte Hutches, Marie Hamrick, and Marsha Smith, all in their official capacities as members of the Raleigh County Board of Education, and Serena L. Starcher, in her official capacity as Superintendent, Raleigh County Board of Education, and Jane Doe

Petitioners

v.

MIRANDA G., individually and on behalf of her minor child A.G., and Carley H., individually and on behalf of her minor E.G.

Respondents

**MOTION FOR LEAVE TO FILE *AMICI CURIAE* BRIEF IN SUPPORT OF
PETITIONERS**

The American Public Health Association, Infectious Diseases Society of America, American Academy of Pediatrics, American College of Physicians, Network for Public Health Law, Grandparents for Vaccines, Defend Public Health, Doctors for America, Alliance for Aging Research and 28 public health law and policy scholars (*see* Exhibit A at i), by and through

undersigned counsel and pursuant to West Virginia Rule of Appellate Procedure 30(c), respectfully move this Court for leave to file the accompanying brief provided at Exhibit A as amicus curiae in support of Petitioners in the above-captioned matter.

Movants are organizations and individuals with recognized expertise in vaccination, public health, epidemiology, and public health law, including national and state vaccine advocacy organizations, public health associations, professional medical societies and academic scholars. As detailed more fully in the accompanying brief, Movants are dedicated to promoting immunization, preventing the spread of communicable diseases, and safeguarding population-level health.

Movants have a substantial interest in ensuring that legal standards governing vaccination policies are interpreted in a manner consistent with established scientific evidence and sound public health principles. The issues presented in this case directly implicate those interests.

An amicus curiae brief is desirable in this case because it provides the Court with specialized scientific and public health expertise that complements, but does not duplicate, the arguments presented by the parties. While the parties principally address the legal claims at issue, Movants offer additional context regarding the real-world public health consequences of vaccination policy. Specifically, the accompanying brief explains the role of vaccination in reducing disease transmission, morbidity, and mortality, and situates the challenged legal framework within the broader context of established public health practice. It also addresses the legal and policy foundations supporting neutral, generally applicable vaccination requirements, as well as scientific support for why such vaccination requirements are the least restrictive means for states to effectively protect children from infectious disease.

The matters asserted are directly relevant to the disposition of this case because the Court’s resolution will have significant implications for vaccination policy, the prevention of disease outbreaks, and the protection of public health, both in West Virginia and more broadly. Movants’ perspective will assist the Court in evaluating these issues with the benefit of scientific and policy expertise—including analysis of the documented effects of various types of vaccination policies—not fully developed in the parties’ submissions.

Movants have conferred with counsel for the parties regarding this motion by email on Friday, March 20, 2026. Petitioners consent to this motion; the Respondents object.

WHEREFORE, Movants respectfully request that the Court grant this motion for leave to file the accompanying brief as amici curiae in support of Petitioners.

Respectfully submitted,

/s/ Carte P. Goodwin

Carte P. Goodwin (WV Bar No. 8039)

Dylan J. George (WV Bar No. 14253)

FBT GIBBONS LLP

United Bank – Suite 1100

500 Virginia Street, East

Charleston, WV 25301

(304) 345-0111 / (304) 345-0115 (f)

/s/ Richard H. Hughes IV

Richard H. Hughes IV (*pro hac vice forthcoming*)

William Walters (*pro hac vice forthcoming*)

EPSTEIN BECKER & GREEN, P.C.

1227 25th Street, N.W., Suite 700

Washington, DC 20037

(202) 861-0900 / (202) 296-2882 (f)

Daniella R. Lee (*pro hac vice forthcoming*)

EPSTEIN BECKER & GREEN, P.C.

201 East Kennedy Blvd., Suite 1260

Tampa, FL 33602

(813) 367-9454 / (813) 367-9441 (f)

Kyla Perrotta (*pro hac vice forthcoming*)

EPSTEIN BECKER & GREEN, P.C.

875 Third Avenue

New York, NY 10022

(212) 351-4500 / (212) 878-8600 (f)

Counsel for the Amici Curiae

Dated: March 26, 2026

IN THE SUPREME COURT OF APPEALS
OF WEST VIRGINIA

**West Virginia Board of Education, Nancy J. White,
in her capacity as President of the Board of Education,
Victor Gabriel, F. Scott Rotruck, L. Paul Hardesty,
Robert W. Dunlevy, Christopher Stansbury,
Deborah Sullivan, Gregory Wooten, Sarah Armstrong
Tucker, and Cathy Justice all in their capacities as
members of the West Virginia Board of Education,
Michelle Blatt, in her official capacity as State Superintendent
of Schools, Raleigh County Board of Education, Larry Ford,
Richard Snuffer, Charlotte Hutches, Marie Hamrick, and Marsha Smith,
all in their official capacities as members of the Raleigh County Board
of Education, and Serena L. Starcher, in her official capacity
as Superintendent, Raleigh County Board of Education, and
Jane Doe**

Petitioners

v.

**MIRANDA G., individually and on behalf of her minor
child A.G., and Carley H., individually and on behalf of her minor E.G.**

Respondents

CERTIFICATE OF SERVICE

I, Carte P. Goodwin, hereby certify that on this 26th day of March, 2026, that I electronically filed the foregoing *Motion for Leave to File Amicus Curiae Brief in Support of Petitioners* using the File & ServeXpress system which sent a Notice of Electronic Filing to, and constitutes service on, counsel of record.

/s/ Carte P. Goodwin
Carte P. Goodwin, Esq.

IN THE SUPREME COURT OF APPEALS
OF WEST VIRGINIA

West Virginia Board of Education, Nancy J. White,
in her capacity as President of the Board of Education,
Victor Gabriel, F. Scott Rotruck, L. Paul Hardesty,
Robert W. Dunlevy, Christopher Stansbury,
Deborah Sullivan, Gregory Wooten, Sarah Armstrong
Tucker, and Cathy Justice all in their capacities as
members of the West Virginia Board of Education,
Michelle Blatt, in her official capacity as State Superintendent
of Schools, Raleigh County Board of Education, Larry Ford,
Richard Snuffer, Charlotte Hutches, Marie Hamrick, and Marsha Smith,
all in their official capacities as members of the Raleigh County Board
of Education, and Serena L. Starcher, in her official capacity
as Superintendent, Raleigh County Board of Education, and
Jane Doe

Petitioners

v.

MIRANDA G., individually and on behalf of her minor
child A.G., and Carley H., individually and on behalf of her minor E.G.

Respondents

AMICI CURIAE BRIEF BY AMERICAN PUBLIC HEALTH ASSOCIATION,
INFECTIOUS DISEASES SOCIETY OF AMERICA, AMERICAN ACADEMY OF
PEDIATRICS, AMERICAN COLLEGE OF PHYSICIANS, NETWORK FOR PUBLIC
HEALTH LAW, GRANDPARENTS FOR VACCINES, DEFEND PUBLIC HEALTH,
DOCTORS FOR AMERICA, ALLIANCE FOR AGING RESEARCH AND 28 PUBLIC
HEALTH LAW AND POLICY SCHOLARS

In Support of Petitioners

On Appeal from the Circuit Court of Raleigh County, West Virginia
Case No. 25-C-230

Carte P. Goodwin (WV Bar No. 8039)
Dylan J. George (WV Bar No. 14253)
FBT GIBBONS LLP
United Bank – Suite 1100
500 Virginia Street, East
Charleston, WV 25301
(304) 345-0111 / (304) 345-0115 (f)

Richard H. Hughes IV (*pro hac vice
forthcoming*)
William Walters (*pro hac vice forthcoming*)
EPSTEIN BECKER & GREEN, P.C.
1227 25th Street, N.W., Suite 700
Washington, DC 20037
(202) 861-0900 / (202) 296-2882 (f)

Daniella R. Lee (*pro hac vice forthcoming*)
EPSTEIN BECKER & GREEN, P.C.
201 East Kennedy Blvd., Suite 1260
Tampa, FL 33602
(813) 367-9454 / (813) 367-9441 (f)

Kyla Perrotta (*pro hac vice forthcoming*)
EPSTEIN BECKER & GREEN, P.C.
875 Third Avenue
New York, NY 10022
(212) 351-4500 / (212) 878-8600 (f)

Counsel for the Amici Curiae

LIST OF AMICI CURIAE

A. Public Health Organizations and Medical Societies

1. American Public Health Association
2. Infectious Diseases Society of America
3. American Academy of Pediatrics
4. American College of Physicians
5. Network for Public Health Law
6. Grandparents for Vaccines
7. Defend Public Health
8. Doctors for America
9. Alliance for Aging Research

B. Public Health Law and Policy Scholars (in their individual capacities)

1. Abramson, Brian Dean, JD, LLM, Adjunct Professor of Vaccine Law, Florida International University College of Law, University of Houston Law Center, Member, Board of Directors, National Vaccine Law Association
2. Alwine, James, Ph.D., Emeritus Professor of Cancer Biology, University of Pennsylvania School of Medicine, Visiting Professor, University of Arizona
3. Bard, Jennifer S., JD, MPH, Ph.D, Professor of Law, College of Law, Professor, Department of Internal Medicine, University of Cincinnati
4. Burris, Scott, JD, James E. Beasley Professor of Law, Director, Center for Public Health Law Research, Temple University Beasley School of Law
5. Campbell, Amy T., JD, MBE, Associate Dean for Law & Health Sciences, Professor of Law, University of Illinois Chicago School of Law
6. Davis, Corey, JD, MSPH, Adjunct Assistant Professor, Department of Population Health, NYU Grossman School of Medicine
7. Fentiman, Linda C., JD, LLM, Professor of Law Emerita, Elisabeth Haub School of Law, Pace University

8. Field, Robert I., JD, MPH, PhD, Professor of Law, Thomas R. Kline School of Law, Professor of Health Management and Policy, Dornsife University School of Public Health, Drexel University
9. Fox, Jacqueline, JD, LLM, Professor of Law, Joseph F. Rice School of Law, University of South Carolina
10. Gonsalves, Gregg S., Ph.D., Associate Professor, Epidemiology of Microbial Diseases, Yale School of Public Health, Associate Professor (adjunct), Yale Law School
11. Gostin, Lawrence, JD, Distinguished University Professor, Georgetown University, Founding O'Neill Chair in Global Health Law, Founding Director, O'Neill Institute, Director, WHO Collaborating Center on Global Health Law
12. Hermer, Laura, JD, LLM, James E. Kelley Professor of Law, Mitchell Hamline School of Law
13. Hoffmann, Diane E., Jacob A. France Professor of Health Law, Director, Law & Health Care Program, University of Maryland Carey School of Law
14. Huang Briggs, Darlene, JD, MPH, Deputy Director, Special Projects, Network for Public Health Law
15. Huberfeld, Nicole, JD, Edward R. Uteley Professor of Health Law, Boston University School of Law and School of Public Health; Co-Director, BU Program on Reproductive Justice; Chair, BU Health Law Program
16. Jacobs, Elizabeth, Ph.D, Professor Emerita, Epidemiology and Biostatistics, University of Arizona, Founding Member, Defend Public Health
17. Jacobson, Peter D., JD, MPH, Professor Emeritus of Health Law and Policy, University of Michigan School of Public Health
18. Kershner, Stacie, JD, Deputy Director, Center for Law, Health and Society, Georgia State University College of Law
19. Landers, Renée M., JD, Professor of Law and Faculty Director, Health and Biomedical Law Concentration and Master of Science in Law, Life Sciences Program, Suffolk University Law School
20. Levin, Donna, JD, Former National Director, Network for Public Health Law, Former General Counsel, Massachusetts Department of Public Health
21. Parmet, Wendy E., JD, Matthews University Distinguished Professor of Law, Northeastern University

22. Ragone, Tara, Assistant Professor, Center for Health & Pharmaceutical Law, Seton Hall University School of Law
23. Reiss, Dorit R., PhD, LLB, Professor of Law, James Edgar Hervey Chair in Litigation, UC Law San Francisco
24. Rempe, Shannon, JD, MPH, Program Director, Advancing Public Health & Health Equity in the Courts, Northeastern University School of Law
25. Rosenbaum, Sara, JD, Professor Emerita, Health Law and Policy, Milken Institute School of Public Health, George Washington University
26. Sinha, Michael S., MD, JD, MPH, FCLM, Associate Professor of Law, Center for Health Law Studies, Saint Louis University School of Law, Associate Professor of Health Management and Policy (Secondary), Saint Louis University College for Public Health and Social Justice
27. Schaler-Haynes, Magda, JD, MPH, Professor of Health Policy and Management, Population and Family Health at CUMC, Columbia University Mailman School of Public Health
28. Watson, Sidney D., JD, Jane and Bruce Robert Professor of Law & Scholar in Residence, Saint Louis University School of Law, Center for Health Law Studies

TABLE OF CONTENTS

I. Interest of Amici Curiae 1

II. Summary of the Argument 1

III. The History of Vaccination for Infectious Disease and How School Vaccination Requirements Reduce the Burden of Disease..... 3

a. Historically, Infectious Diseases Caused Widespread Childhood Illness, Disability, and Death and Vaccination Requirements Reduced This Burden..... 3

b. Herd Immunity and Population Protection..... 12

c. Schools as High-Risk Environments for Transmission 13

IV. Vaccine Requirements Pass Constitutional Muster Under Any Level of Scrutiny 15

a. Vaccine Requirements Are Neutral and Generally Applicable, and Therefore Subject Only to Rational Basis Review..... 15

b. Even if Strict Scrutiny Applies, Vaccine Mandates Without Religious Exemptions Are the Least Restrictive Means for States to Effectively Protect Children from Infectious Disease 16

V. The Relative Purposes and Impacts of Medical Versus Religious Vaccine Exemptions 19

a. Medical Exemption: Narrow, Evidence-Based, and Constitutionally Consistent 19

b. The Public Health Consequences of Non-Medical Exemptions..... 20

c. The Tale of Two Outliers: How the Mississippi and West Virginia Exemption Stories Can Follow Two Different Paths 23

VI. Conclusion 25

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Ashcroft v. ACLU</i> , 542 U.S. 656 (2004).....	18
<i>Bosarge v. Edney</i> , 669 F. Supp. 3d 598 (S.D. Miss. 2023).....	23, 24
<i>Brown v. Stone</i> , 378 So. 2d 218 (Miss. 1979).....	23
<i>Church of the Lukumi Babalu Aye, Inc. v. City of Hialeah</i> , 508 U.S. 520 (1993).....	17
<i>Does 1-6 v. Mills</i> , 566 F. Supp. 3d 34 (D. Me.), aff'd, 16 F.4th 20 (1st Cir. 2021)	16
<i>Emp. Div., Dep't of Hum. Res. of Oregon v. Smith</i> , 494 U.S. 872 (1990).....	18
<i>F.F. v. State</i> , 194 A.D.3d 80 (2021)	16
<i>Fulton v. City of Philadelphia</i> , 593 U.S. 522 (2021).....	17
<i>Jacobson v. Massachusetts</i> , 197 U.S. 11 (1905).....	16, 17
<i>McCarthy v. Boozman</i> , 212 F. Supp. 2d 945 (W.D. Ark. 2002)	17
<i>Prince v. Massachusetts</i> , 321 U.S. 158 (1944).....	16, 17
<i>Roman Cath. Diocese of Brooklyn v. Cuomo</i> , 592 U.S. 14 (2020).....	17
<i>Sherbert v. Verner</i> , 374 U.S. 398 (1963).....	17
<i>Tandon v. Newsom</i> , 59 U.S. 61 (2021).....	17

<i>We The Patriots USA, Inc. v. Connecticut Off. of Early Childhood Dev.</i> , 76 F.4th 130 (2d Cir. 2023)	16
<i>Workman v. Mingo Cnty. Bd. of Educ.</i> , 419 F. App'x 348 (4th Cir. 2011).....	17
<i>Zucht v. King</i> , 260 U.S. 174 (1922).....	16, 24
Statutes	
West Virginia Rule of Appellate Procedure 30(e)(5)	1
Other Authorities	
A Katharina Simon, et al., <i>Evolution of the immune system in humans from infancy to old age</i> , 282 PROCEEDINGS B ROYAL SOC'Y 1 (2015)	14
<i>Achievements in Public Health, 1900-1999: Control of Infectious Diseases</i> , 48 MORBIDITY & MORTALITY WKLY. REP. 621 (1999).....	3
Adriana Lopez, et al., <i>Varicella</i> , in in PINK BOOK ch. 22 (Ctrs. for Disease Control & Prevention, 14th ed. 2021)	8
Adriana S. Lopez, et al., <i>Two-Dose Varicella Vaccination Coverage Among Children Aged 7 years — Six Sentinel Sites, United States, 2006–2012</i> , 63 MORBIDITY & MORTALITY WKLY REP. 174 (2014).....	8
Angel N. Desai & Maimuna S. Majumder, <i>What is Herd Immunity?</i> 324 JAMA 2113 (2020).....	12, 14
Anna M. Acosta, et al., <i>Diphtheria</i> , in PINK BOOK ch. 7 (Ctrs. For Disease Control & Prevention, 14th ed. 2021).....	4
Anthony Bald, et al., <i>State Repeal of Nonmedical Vaccine Exemptions and Kindergarten Vaccination Rates</i> , 180 JAMA Pediatrics 56 (2025)	21
Ari Asercion, <i>Removing Personal Belief Exemptions for the Measles, Mumps, and Rubella Vaccine School Requirement: The Effects on Immunization Rates</i> , UNIV. OF WASH. (May 22, 2023)	21
Ashley Gromis & Ka-Yuet Liu, <i>Spatial Clustering of Vaccine Exemptions on the Risk of a Measles Outbreak</i> , 149 PEDIATRICS e2021050971(2021)	24
<i>Big Jump In Cases</i> , U.S. NEWS (Mar. 9, 2026).....	11
Carlin Aloe, et al., <i>Geospatial analysis of nonmedical vaccine exemptions and pertussis outbreaks in the United States</i> , 27 PROCEEDINGS OF THE NAT'L ACAD. OF SCIENCES OF THE UNITED STATES OF AMERICA 7101 (2017).....	20, 23

Carrie L. Byington, et al., <i>Community Surveillance of Respiratory Viruses Among Families in the Utah Better Identification of Germs-Longitudinal Viral Epidemiology (BIG-LoVE) Study</i> , 61 CLINICAL INFECTIOUS DISEASES 1217 (2015).....	15
Cayman Doran, <i>From policy to pathogens: Declining vaccination rates and preventable disease resurgence</i> , INFECTIOUS DISEASES SOC’Y OF AMERICA (Mar. 9, 2026)	15
Charles L. Jackson, <i>State Laws on Compulsory Immunization in the United States</i> , 84 PUBLIC HEALTH REPORTS 787 (1969).....	5, 6
<i>Chickenpox Vaccine Saves Lives Infographic</i> , CTRS. FOR DISEASE CONTROL & PREVENTION (May 9, 2024)	7
<i>Childhood Vaccination Rates</i> , ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICIALS (Mar. 16, 2023).....	18, 19
Christopher S. Carpenter & Emily C. Lawler, <i>Direct and Spillover Effects of Middle School Vaccination Requirements</i> , 11 AMERICAN ECONOMIC JOURNAL 95 (2019).....	11
Concepcion F. Estivariz, et al., <i>Poliomyelitis</i> , in PINK BOOK ch. 18 (Ctrs. for Disease Control & Prevention, 14th ed. 2021)	4
D R Feikin, et al., <i>Individual and community risks of measles and pertussis associated with personal exemptions to immunization</i> , 284 JAMA 3145 (2000).....	22
Dennis Thompson, <i>Small Drop In Measles Vaccinations Tied to Big Jump In Cases</i> , U.S. NEWS (Mar. 9, 2026)	11
Douglas J. Opel & Saad B. Omer, <i>Measles, Mandates, and Making Vaccination the Default Option</i> , 169 JAMA PEDIATRICS 303 (2015).....	10
Eileen Wang, et al., <i>Nonmedical exemptions from school immunization requirements: a systematic review</i> , 104 AMERICAN J. OF PUBLIC HEALTH e62 (2014).....	20
Elyse Olshen Kharbanda, <i>Changes in Tdap and MC4 Vaccine Coverage Following Enactment of a Statewide Requirement</i> , 100 AMERICAN J. OF PUBLIC HEALTH 1635 (2010)	11
Fang Li, et al., <i>Household transmission of SARS-CoV-2 and risk factors for susceptibility and infectivity in Wuhan</i> , 21 THE LANCET INFECTIOUS DISEASES 617 (2021)	15

Fangjun Zhou, et al., <i>Health and Economic Impact of the United States Varicella Vaccination Program, 1996–2020</i> , 226 <i>The J. of Infectious Disease</i> , S463 (2022).....	7, 12
Fangjun Zhou, et al., <i>Impact of Varicella Vaccination on Health Care Utilization</i> , 294 <i>JAMA</i> 797 (2005).....	12
Fiona P. Havers, et al., <i>Pertussis</i> , in <i>PINK BOOK</i> ch. 16 (Ctrs. for Disease Control & Prevention, 14th ed. 2021).....	5, 6
Francisco Averhoff, et al., <i>A Middle School Immunization Law Rapidly and Substantially Increases Immunization Coverage Among Adolescents</i> , 94 <i>AMERICAN PUBLIC HEALTH ASSOC.</i> 978 (2004).....	11
Heather Tomlinson, <i>The Impact of Non-Medical Vaccine Exemptions on Childhood Vaccination Rates</i> , <i>ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICIALS</i> (Mar. 16, 2023).....	18, 19
Impact of U.S. Chickenpox Vaccination Program: A Public Health Success Story, <i>CTRS. FOR DISEASE CONTROL & PREVENTION</i> (Apr. 22, 2024).....	6, 8
<i>Infectious Diseases and Immune-Compromised People</i> , <i>CHILDREN’S HOSPITAL OF PHILADELPHIA</i> (2020).....	14
Institute of Medicine (US) Committee for the Study of the Future of Public Health, <i>A History of the Public Health System</i> , in <i>THE FUTURE OF PUBLIC HEALTH</i> ch. 3 (Nat’l Acads. Press 1988).....	3
Jean Maguire van Seventer & Natsha S. Hochberg, <i>Principles of Infectious Diseases: Transmission, Diagnosis, Prevention, and Control</i> , 6 <i>INT’L ENCYCLOPEDIA OF PUBLIC HEALTH</i> 22.....	13, 14
Jessica R. Cataldi, et al., <i>Evidence-based strategies to increase vaccination uptake: a review</i> , 32 <i>CURRENT OPINION IN PEDIATRICS</i> 151 (2020).....	10
John W. Correia, et al., <i>School Vaccine Coverage and Medical Exemption Uptake After the New York State Repeal of Nonmedical Vaccination Exemptions</i> , 7 <i>JAMA NETWORK</i> 1 (2024).....	22
Josh Michaud, <i>U.S. Measles Outbreaks: A New Abnormal Vaccine Hesitancy</i> (Feb. 28, 2025).....	10
Kevin M. Malone and Alan R. Hinman, <i>Vaccination Mandates: The Public Health Imperative and Individual Rights</i> , in <i>Vaccination Mandates</i> ch. 13 (Ctrs. for Disease Control & Prevention, 2003).....	9, 19

Laurie D Elam-Evans, et al., <i>Celebrating 25 Years of Varicella Vaccination Coverage for Children and Adolescents in the United States</i> , 226 THE J. OF INFECTIOUS DISEASES S416 (2022).....	8
Libby Richard, <i>Infectious Diseases Spike When Kids Return to School – Here’s What You Can Do About It</i> , CLINICAL ADVISOR (Aug. 20, 2024)	13
Linda Washington-Brown & Rose Wimbish- Tompkins, <i>Vaccines, Herd Immunity, and COVID-19</i> , 32 ABNF J. 42 (2021).....	14
Luke Taylor, <i>US Measles Cases at Highest Number in 30 Years</i> , BMJ (Jan. 7, 2026)	9
Margaret K. Doll, et al., Margaret K. Doll, et al., <i>An Evaluation of Voluntary 2-Dose Varicella Vaccination Coverage in New York City Public Schools</i> , AMERICAN J. OF PUBLIC HEALTH 972 (2015).....	8
Mariel Marlow, et al., <i>Mumps</i> , in PINK BOOK ch. 15 (Ctrs. For Disease Control & Prevention, 14th ed. 2021)	4
<i>Measles</i> , NAT’L FOUND. FOR INFECTIOUS DISEASES, https://www.nfid.org/resource/frequently-asked-questions-about-measles/ (last visited Mar. 16, 2026).....	8
<i>Measles</i> , 26 MORBIDITY & MORTALITY WKLY REP. 109 (1977)	10
Melanie D. Whittington, et al., <i>Impact of Nonmedical Vaccine Exemption Policies on the Health and Economic Burden of Measles</i> , 17 Immunization 571 (2017).....	22
<i>More Illness, Greater Cost Spotlight Brief</i> , Common Health Coalition (2026)	12
Patrick Berche, <i>History of measles</i> , 51 LA PRESSE MÉDICALE 3 (2022)	3
Paul Gastanaduy, et al., <i>Measles</i> , in PINK BOOK ch. 13 (Ctrs. For Disease Control & Prevention, 14th ed. 2021).....	4, 9, 10
Pedro Plans-Rubio, <i>Evaluation of the establishment of herd immunity in the population by means of serological surveys and vaccination coverage</i> , 8 HUMAN VACCINES & IMMUNOTHERAPEUTICS 184 (2012)	13
Penina Haber, et al., <i>Hepatitis B</i> , in PINK BOOK ch. 10 (Ctrs. For Disease Control & Prevention, 14th ed. 2021).....	4
<i>Pertussis – United States, 1982 and 1983</i> , MORBIDITY & MORTALITY WKLY REP. 573 (1984).....	5, 6

Ranee Seither, MPH, et al., <i>Coverage with Selected Vaccines and Exemption from School Vaccine Requirements Among Children in Kindergarten — United States, 2022–23 School Year</i> , 72 MORBIDITY & MORTALITY WKLY. REP 1217 (Nov. 10, 2023).....	20
<i>Rapidly and Substantially Increases Immunization Coverage Among Adolescents</i> , 94 AMERICAN PUBLIC HEALTH ASSOC. 978 (2004)	11
<i>Relationship Between Vaccines and Herd Immunity</i> , COLUMBIA MAILMAN SCHOOL OF PUBLIC HEALTH (Apr. 9, 2021)	14
Robert A Bednarczyk, et al., <i>Current landscape of nonmedical vaccination exemptions in the United States: impact of policy changes</i> , 18 EXPERT REVIEW OF VACCINES 175 (2019).....	22
Saad B. Omer, et al., <i>Geographic clustering of nonmedical exemptions to school immunization requirements and associations with geographic clustering of pertussis</i> , 168 American J. of Epidemiology 1389 (2008)	23
Saad B. Omer, et al., <i>Nonmedical exemptions to school immunization requirements: secular trends and association of state policies with pertussis incidence</i> , 296 JAMA 1757 (2006).....	22
Sarah A. Mbaeyi, et al., <i>Meningococcal Vaccination: Recommendations of the Advisory Committee on Immunization Practices, United States, 2020</i> , 69 MORBIDITY & MORTALITY WKLY. REP. 1 (2020)	4
Sarah Mbaeyi & Shannon Stokley, <i>Meningococcal Conjugate Vaccine in the United States: Remaining Challenges for Adolescent Vaccination</i> , 65 J. ADOLESCENT HEALTH 11 (2019)	4
Shuta Kikuchi, et al., <i>Quantification of droplet and contact transmission risks among elementary school students based on network analyses using video-recorded data</i> , 20 PLoS ONE 1 (2025)	13
Sindiso Nyathi, et al., <i>The 2016 California policy to eliminate nonmedical vaccine exemptions and changes in vaccine coverage: An empirical policy analysis</i> , 16 PLoS MEDICINE 1 (2019).....	21
<i>Six Sentinel Sites, United States, 2006–2012</i> , 63 MORBIDITY & MORTALITY WKLY REP. 174 (2014).....	8
Stanford T Shulman, <i>The History of Pediatric Infectious Diseases</i> , 55 J. PEDIATRIC RES. 163 (2004).	3
Tatiana Lanzieri, et al., <i>Rubella</i> , in PINK BOOK ch. 20 (Ctrs. For Disease Control & Prevention, 14th ed. 2021).....	4

Tejpratap S.P. Tiwari, et al., <i>Tetanus</i> , in PINK BOOK ch. 21 (Ctrs. For Disease Control & Prevention, 14th ed. 2021).....	4
Tuhina Srivastava, et al., <i>Impact of school-entry vaccination requirement changes on clinical practice implementation and adolescent vaccination rates in metropolitan Philadelphia</i> , 16 HUMAN VACCINES & IMMUNOTHERAPEUTICS 1155 (2020).....	11
<i>Why is my child always sick? A pediatrician answers your questions</i> , CHILDREN’S HOSPITAL OF ORANGE COUNTY (Aug. 18, 2022)	14
Yaa Karikari, <i>Impact of Vaccine Mandate on Tdap Vaccination Coverage among Illinois Students 2014-2015</i> , 27 PAN AFRICAN MEDICAL JOURNAL 1 (2017).....	11
Yue-Tong Li, et al., <i>Childhood infectious diseases: experiences and challenges</i> , 21 WORLD J. OF PEDIATRICS 755 (20205).....	14

I. Interest of Amici Curiae

Amici curiae are organizations and individuals with expertise in vaccination, public health, epidemiology, and public health law, including national and state vaccine advocacy organizations, public health associations, professional medical societies, and individual public health scholars.¹ Amici have a strong interest in ensuring that public health laws are interpreted and applied consistent with established science and the protection of community health.

These organizations and experts have dedicated their professional work to promoting immunization, preventing communicable diseases, and safeguarding population-level or “herd” immunity. Amici have a direct interest in this case because the outcome has broad implications for the effectiveness of vaccination policy, the maintenance of herd immunity, and the prevention of outbreaks of serious childhood diseases.

Amici submit this brief to offer the Court scientific and public health expertise concerning the role of vaccination in reducing disease transmission and associated morbidity and mortality. Amici seek to assist the Court in understanding both the public health rationale and the legal framework supporting neutral, generally applicable vaccination requirements and explain why school vaccination mandates without non-medical exemptions are the least restrictive means for achieving these goals.

II. Summary of the Argument

Infectious diseases do not merely inconvenience communities – they disable and kill children. In the close quarters of classrooms, playgrounds, and school buses, communicable diseases spread with ruthless efficiency. History shows the consequences of unchecked disease.

¹ Pursuant to West Virginia Rule of Appellate Procedure 30(e)(5), amici curiae, by counsel, represents that no counsel for a party to this action authored this Brief in whole or in part. Moreover, no such counsel or party made a monetary contribution specifically intended to fund the preparation or submission of this Brief. Finally, no other person who would need to be identified under Rule 30(e)(5) made a monetary contribution toward this Brief.

Before routine vaccination, outbreaks of measles swept through schools and neighborhoods, leaving children with pneumonia, brain swelling, permanent neurological damage, and sometimes death. Polio paralyzed tens of thousands of children in the United States alone, leaving many permanently disabled and others dependent on iron lungs to breathe. Pertussis can suffocate infants during violent coughing fits, sometimes causing brain injury or death. These are not distant historical curiosities. When vaccination coverage (the percentage of people in a population who have received a specific vaccine) falls, these diseases return, moving quickly through schools and communities and leaving devastation in their wake. Infectious disease outbreaks fracture families, overwhelm hospitals, and impose lasting trauma on communities forced to watch preventable suffering unfold among their children.

Schools are common sites of enhanced disease transmission, as sustained close contact among large numbers of children provides ideal conditions for pathogens to spread. Effective prevention therefore depends not on individual centric protection, but on maintaining high levels of population-wide immunity that interrupt chains of transmission and reduce the overall number of children who become seriously ill or die from vaccine-preventable diseases before outbreaks can take hold. Vaccination is uniquely capable of achieving this effect and vaccination requirements for school-entry are designed to preserve this collective protection. When those requirements are weakened by broad non-medical exemptions, immunity gaps emerge.

American vaccine law developed not in abstraction, but in response to recurring and devastating outbreaks of communicable disease. Because school vaccination requirements are neutral and generally applicable public health measures designed to prevent the spread of communicable disease, they are ordinarily evaluated under rational basis review. But, even if heightened scrutiny were applied, vaccination requirements must still survive. Preventing the

spread of communicable diseases, protecting children, safeguarding those who cannot be vaccinated for medical reasons, and avoiding outbreaks that impose serious morbidity, mortality, and social disruption are compelling governmental interests. Requiring vaccination for school attendance, while permitting only medical exemptions, is the least restrictive means of achieving those interests because no alternative approach accomplishes the State’s aim to protect children and communities as effectively from vaccine-preventable disease.

III. The History of Vaccination for Infectious Disease and How School Vaccination Requirements Reduce the Burden of Disease

a. Historically, Infectious Diseases Caused Widespread Childhood Illness, Disability, and Death and Vaccination Requirements Reduced This Burden.

School vaccination requirements did not arise arbitrarily. They emerged from repeated experience with devastating infectious disease outbreaks that once killed or disabled thousands of American children each year. Throughout the nineteenth century, epidemic illnesses—most notably smallpox, but also diphtheria, and measles—repeatedly swept through American communities.² Outbreaks moved quickly, particularly among children gathered in dense urban schools, and mortality rates were staggering by modern standards.³ Cemeteries from that era stand as enduring records of the brevity of many young lives.⁴ Public health law during this period was largely reactive: with late vaccination campaigns targeting disease outbreaks.⁵

The twentieth century, however, marked a decisive shift. Across the United States, the introduction of vaccines was associated with substantial declines in vaccine-preventable diseases.

² *Achievements in Public Health, 1900-1999: Control of Infectious Diseases*, 48 MORBIDITY & MORTALITY WKLY. REP. 621 (1999) (“The 19th century shift in population from country to city that accompanied industrialization and immigration led to overcrowding in poor housing served by inadequate or nonexistent public water supplies and waste-disposal systems. These conditions resulted in repeated outbreaks of cholera, dysentery, TB, typhoid fever, influenza, yellow fever, and malaria.”).

³ Stanford T Shulman, *The History of Pediatric Infectious Diseases*, 55 J. PEDIATRIC RES. 163, 167-68 (2004).

⁴ See Patrick Berche, *History of measles*, 51 LA PRESSE MÉDICALE 3 (2022).

⁵ See Institute of Medicine (US) Committee for the Study of the Future of Public Health, *A History of the Public Health System*, in THE FUTURE OF PUBLIC HEALTH ch. 3 (Nat’l Acads. Press 1988).

This trend is evident for many preventable diseases for which West Virginia requires vaccination for school-entry, including polio⁶, diphtheria, tetanus, pertussis, measles, mumps, rubella, hepatitis B and meningococcal disease.⁷ Approaches to disease control that had once been reactive and fragmented gradually gave way to systematic vaccination campaigns backed by expanding legal authority and scientific innovation. School-entry requirements expanded accordingly, transforming schools from sites of recurrent amplification into structured points of protection. The evolution was incremental and disease-specific: each addition of a school-entry vaccination requirement reflected the availability of a safe and effective prevention tool. The resulting framework was not an abrupt expansion of state authority, but a measured adaptation to scientific progress and the accumulation of preventable infectious threats. As additional vaccines became available, public health efforts increasingly focused on reducing the substantial burden that diseases once imposed on children and communities.

Historical surveillance data demonstrates not only that vaccines protect individual recipients, but that they safeguard society as a whole in multiple, measurable ways. As vaccines became widely available across the twentieth century and immunization policies were

⁶ Polio provides one of the clearest examples. In 1952, before the polio virus was introduced, more than 21,000 Americans were paralyzed by the disease in a single year, many of them children. After the introduction of mass vaccination, beginning in 1955, cases fell rapidly, with school-based vaccination campaigns playing a key role in their adoption. There have been no new cases of wild poliovirus in the US since 1979. See Concepcion F. Estivariz, et al., *Poliomyelitis*, in PINK BOOK ch. 18 (Ctrs. for Disease Control & Prevention, 14th ed. 2021).

⁷ Anna M. Acosta, et al., *Diphtheria*, in PINK BOOK ch. 7 (Ctrs. For Disease Control & Prevention, 14th ed. 2021); Tejpratap S.P. Tiwari, et al., *Tetanus*, in PINK BOOK ch. 21 (Ctrs. For Disease Control & Prevention, 14th ed. 2021); *Pertussis Surveillance and Trends*, CTRS. FOR DISEASE CONTROL & PREVENTION (Dec. 2, 2025), <https://www.cdc.gov/pertussis/php/surveillance/index.html> (last visited Mar. 16, 2026); Paul Gastanaduy, et al., *Measles*, in PINK BOOK ch. 13 (Ctrs. For Disease Control & Prevention, 14th ed. 2021); Mariel Marlow, et al., *Mumps*, in PINK BOOK ch. 15 (Ctrs. For Disease Control & Prevention, 14th ed. 2021); Tatiana Lanzieri, et al., *Rubella*, in PINK BOOK ch. 20 (Ctrs. For Disease Control & Prevention, 14th ed. 2021); *Hepatitis Basics*, CTRS. FOR DISEASE CONTROL & PREVENTION (Aug. 29, 2025), <https://www.cdc.gov/hepatitis-b/about/index.html> (last visited Mar. 16, 2026); Penina Haber, et al., *Hepatitis B*, in PINK BOOK ch. 10 (Ctrs. For Disease Control & Prevention, 14th ed. 2021); Sarah A. Mbaeyi, et al., *Meningococcal Vaccination: Recommendations of the Advisory Committee on Immunization Practices, United States, 2020*, 69 MORBIDITY & MORTALITY WKLY. REP. 1, 3–5 (2020); Sarah Mbaeyi & Shannon Stokley, *Meningococcal Conjugate Vaccine in the United States: Remaining Challenges for Adolescent Vaccination*, 65 J. ADOLESCENT HEALTH 11 (2019).

implemented, the overall burden of these diseases declined significantly. Incidence rates of once-common childhood diseases declined, hospitalizations fell, childhood mortality dropped, and the long-term complications that once burdened families and public institutions became rare. These reductions did not merely reflect individual protection; they illustrate population-level effects. A few examples illustrate this pattern.

Pertussis-containing vaccines

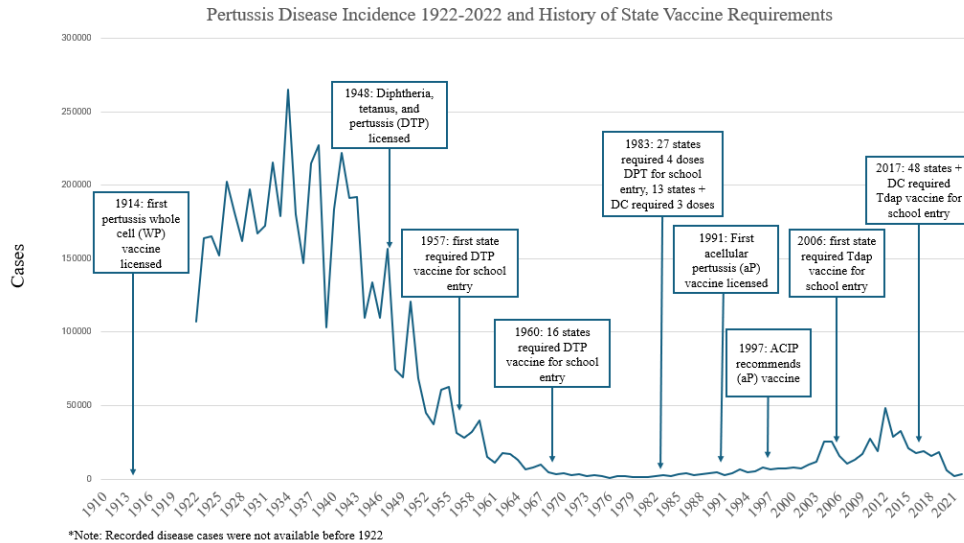
Pertussis was once a major cause of childhood illness in the United States, with reported cases peaking in the 1930s at more than 250,000 cases per year.⁸ As Figure 1 below illustrates, the number of new cases declined by 90% following the introduction of pertussis-containing vaccines.⁹ After early whole-cell pertussis vaccines were introduced in the early twentieth century and the combined diphtheria, tetanus and pertussis (“DTP”) vaccine was licensed in 1948, disease incidence began to decline rapidly. As states increasingly adopted school immunization requirements, these reductions accelerated: the first state required DTP vaccination for school-entry in 1957, 16 states had requirements by 1960, and by 1983 most states required three or four doses. With later vaccine advancements, including licensure of the acellular pertussis vaccine in 1991 and the addition of adolescent Tdap requirements beginning in 2006 and expanding to 48 states plus the District of Columbia by 2017, pertussis incidence continued to fall and stabilize at far lower levels than in the pre-vaccine era. Together, the introduction of effective vaccines and

⁸ See Fiona P. Havers, et al., *Pertussis*, in PINK BOOK ch. 16 (Ctrs. for Disease Control & Prevention, 14th ed. 2021); *Tdap (Tetanus-Diphtheria-Pertussis) Vaccine Requirements for Secondary School*, IMMUNIZE (last updated May 2025) <https://www.immunize.org/official-guidance/state-policies/vaccine-requirements/tdap-school-2025/> (last visited Mar. 17, 2026); Charles L. Jackson, *State Laws on Compulsory Immunization in the United States*, 84 PUBLIC HEALTH REPORTS 787 (1969); *Pertussis – United States, 1982 and 1983*, MORBIDITY & MORTALITY WKLY REP. 573 (1984).

⁹ *Pertussis Surveillance and Trends*, CTRS. FOR DISEASE CONTROL & PREVENTION (Dec. 2, 2025), <https://www.cdc.gov/pertussis/php/surveillance/index.html> (last visited Mar. 16, 2026).

the expansion of school-entry requirements steadily winnowed down the burden of pertussis, reducing both disease incidence and the serious complications associated with infection.

Figure 1: Pertussis Disease Incidence 1922-2022 and History of State Vaccine Requirements



10

Varicella

Varicella (chickenpox) vaccination is also considered a significant public health success story, effectively decreasing disease spread, hospitalizations, and deaths.¹¹ Prior to the vaccine introduction, chickenpox was very common; in the early 1990s, there were more than 160,000 cases of chickenpox per year, including between 10,500-13,500 hospitalizations, and 100-150 deaths.¹² Behind those once-“routine” numbers lurked a virus that could turn a simple childhood rash into a rapid cascade of severe complications, pneumonia, brain inflammation, and death,

¹⁰ See Fiona P. Havers, et al., *Pertussis*, in PINK BOOK ch. 16 (Ctrs. for Disease Control & Prevention, 14th ed. 2021); *Tdap (Tetanus-Diphtheria-Pertussis) Vaccine Requirements for Secondary School*, IMMUNIZE (last updated May 2025) <https://www.immunize.org/official-guidance/state-policies/vaccine-requirements/tdap-school-2025/> (last visited Mar. 17, 2026); Charles L. Jackson, *State Laws on Compulsory Immunization in the United States*, 84 PUBLIC HEALTH REPORTS 787 (1969); *Pertussis – United States, 1982 and 1983*, MORBIDITY & MORTALITY WKLY REP. 573 (1984).

¹¹ Impact of U.S. Chickenpox Vaccination Program: A Public Health Success Story, CTRS. FOR DISEASE CONTROL & PREVENTION (Apr. 22, 2024), <https://www.cdc.gov/chickenpox/vaccination-impact/index.html> (last visited Mar. 18, 2026).

¹² *Id.*

sometimes striking without warning even in otherwise healthy children. As described in Figure 2 below, state policies began to emerge shortly after the vaccine became available: the first state implemented a varicella school-entry requirement in 1997. By 2001, more than half of states required one dose for childcare settings, and by 2002 roughly half of the states required a single dose for school-entry. As more states adopted these policies, reported varicella cases declined substantially nationwide. In fact, since vaccination was introduced in 1995, chickenpox cases have declined by more than 97%.¹³

During the early 2000s, surveillance data showed a modest increase in cases between 2002 and 2006, which led the Advisory Committee on Immunization Practices to recommend a routine second dose in 2006. States subsequently expanded their requirements to reflect the two-dose schedule. By 2012, 35 states and the District of Columbia required two doses for school-entry, and by 2021 that number had grown to 44 states plus the District of Columbia, while all 50 states required at least one dose by 2015. As these requirements expanded, varicella incidence declined again and has remained at historically low levels, illustrating how vaccine introduction and correspondingly strengthened immunization policies have progressively reduced disease burden and associated complications.

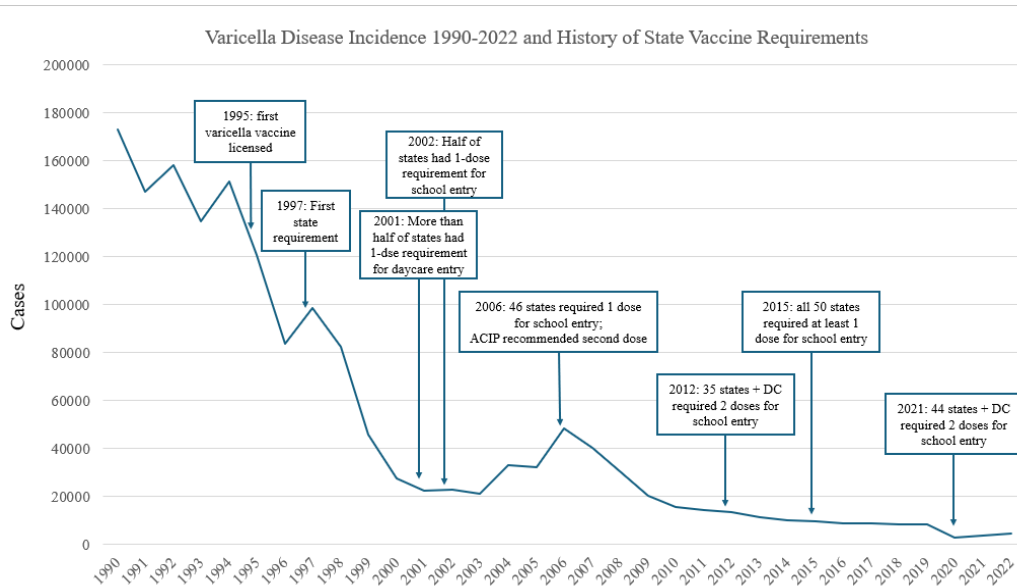
Over the first 25 years, varicella vaccination prevented 91 million cases of chickenpox, 238,000 hospitalizations and nearly 2,000 deaths.¹⁴ Thanks to vaccination and vaccination tied to

¹³ *Id.*

¹⁴ *Chickenpox Vaccine Saves Lives Infographic*, CTRS. FOR DISEASE CONTROL & PREVENTION (May 9, 2024), <https://www.cdc.gov/chickenpox/vaccination-impact/infographic.html> (last visited Mar. 16, 2026); Fangjun Zhou, et al., *Health and Economic Impact of the United States Varicella Vaccination Program, 1996–2020*, 226 *The J. of Infectious Diseases*, S463, S466 (2022).

schools, chickenpox disease is largely suppressed; each year, there are now fewer than 150,000 cases, 1,400 hospitalizations, and 30 deaths.¹⁵

Figure 2: Varicella Disease Incidence 1990-2022 and History of State Vaccine Requirements



16

Measles

Measles is the most contagious virus known to humans and has historically caused widespread illness and serious complications.¹⁷ Before vaccination, the United States recorded roughly 500,000 reported cases and about 500 deaths each year, and due to underreporting, the number of annual cases was likely closer to 3-4 million cases.¹⁸ As shown in Figure 3 below, the

¹⁵ Impact of U.S. Chickenpox Vaccination Program: A Public Health Success Story, CTRS. FOR DISEASE CONTROL & PREVENTION (Apr. 22, 2024), <https://www.cdc.gov/chickenpox/vaccination-impact/index.html> (last visited March 16, 2026).

¹⁶ See Adriana Lopez, et al., *Varicella*, in PINK BOOK ch. 22 (Ctrs. for Disease Control & Prevention, 14th ed. 2021); Adriana S. Lopez, et al., *Two-Dose Varicella Vaccination Coverage Among Children Aged 7 years — Six Sentinel Sites, United States, 2006–2012*, 63 MORBIDITY & MORTALITY WKLY REP. 174 (2014); Margaret K. Doll, et al., *An Evaluation of Voluntary 2-Dose Varicella Vaccination Coverage in New York City Public Schools*, AMERICAN J. OF PUBLIC HEALTH 972 (2015); Laurie D Elam-Evans, et al., *Celebrating 25 Years of Varicella Vaccination Coverage for Children and Adolescents in the United States*, 226 THE J. OF INFECTIOUS DISEASES S416 (2022).

¹⁷ *Frequently Asked Questions about Measles*, NAT'L FOUND. FOR INFECTIOUS DISEASES, <https://www.nfid.org/resource/frequently-asked-questions-about-measles/> (last visited Mar. 16, 2026).

¹⁸ *History of Measles*, CTRS. FOR DISEASE CONTROL & PREVENTION (May 9, 2024), [https://www.cdc.gov/measles/about/history.html#:~:text=A%20vaccine%20became%20available%20in.encephalitis%20\(swelling%20of%20the%20brain\)](https://www.cdc.gov/measles/about/history.html#:~:text=A%20vaccine%20became%20available%20in.encephalitis%20(swelling%20of%20the%20brain)) (last visited Mar. 16, 2026).

first measles vaccine was licensed in 1963, and states soon began adopting school immunization requirements to increase coverage among children. After the vaccine was introduced in 1963, measles incidence decreased by more than 95%.¹⁹ By 1969, 17 states required measles vaccination for school-entry; by 1973, 35 states required measles vaccination for school-entry; and by 1980 all 50 states had school vaccination policies for measles.

In the early 1970s, states with measles school-vaccination requirements had 40 – 51% lower measles incidence (rate of new cases) than states without such laws.²⁰ When those requirements were strictly enforced during outbreaks in Alaska and Los Angeles, vaccination compliance increased rapidly and measles transmission declined sharply.²¹ Broader comparisons likewise showed that states enforcing comprehensive school-vaccination laws experienced measles incidence rates less than half those of other states within one year and less than one-tenth within two years.²²

The steady expansion of these policies, combined with widespread use of measles-containing vaccines, substantially reduced transmission and helped drive measles from a ubiquitous childhood infection to a rare disease in the United States. However, there is currently a sustained measles epidemic in the United States, with the highest number of measles cases we've seen in 30 years.²³ This can largely be attributed to the increased utilization of exemptions to

¹⁹ Paul Gastanaduy, et al., *Measles*, in PINK BOOK ch. 13 (Ctrs. For Disease Control & Prevention, 14th ed. 2021).

²⁰ Kevin M. Malone and Alan R. Hinman, *Vaccination Mandates: The Public Health Imperative and Individual Rights*, in *Vaccination Mandates* ch. 13 (Ctrs. for Disease Control & Prevention, 2003).

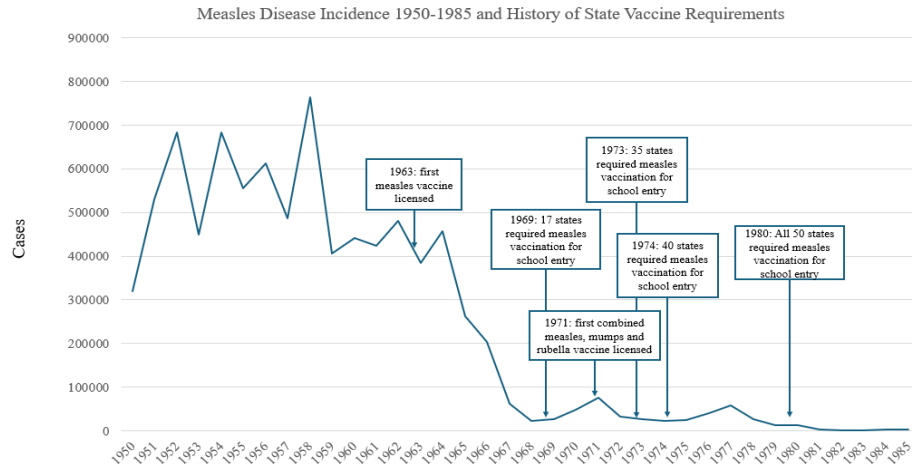
²¹ *Id.*

²² *Id.*

²³ Luke Taylor, *US Measles Cases at Highest Number in 30 Years*, BMJ (Jan. 7, 2026), <https://www.bmj.com/content/392/bmj.s29#:~:text=A%20total%20of%202065%20confirmed,from%20285%20infections%20in%202024> (last visited Mar. 16, 2026); Dr. Jay Bhattacharya, head of the National Institute of Health and interim head of Centers for Disease Control and Prevention, stated in a public service announcement about the measles outbreaks: “There is no cure for measles, which is why prevention is so critical. The MMR vaccine remains the most reliable and effective way to prevent it. Two doses are 97 percent effective at providing lifelong protection against measles and its complications. Vaccination protects not only individuals but entire communities.” CDC (@CDCgov), X, (Mar. 2, 2026 at 12:00 ET, at 01:06),

school-entry requirements, reductions in vaccination rates, and a subsequent increase in the number of unvaccinated individuals.²⁴

Figure 3: Measles Disease Incidence 1950-1985 and History of State Vaccine Requirements



25

Other Vaccination Requirements

School immunization entry requirements are associated with increased pediatric and adolescent immunization uptake. School and day care immunization requirements are also associated with a decrease in vaccine-preventable diseases.²⁶

For example, national analyses of tetanus, diphtheria, and pertussis (“Tdap”) vaccination requirements found that mandates increased the likelihood that an adolescent received a Tdap booster between 10 and 12 years of age by 13.5–13.7 percentage points and substantially reduced

https://x.com/cdcgov/status/2028515731059425704?s=42&utm_source=substack&utm_medium=email/ (last visited Mar. 16, 2026).

²⁴ Josh Michaud, *U.S. Measles Outbreaks: A New Abnormal Vaccine Hesitancy* (Feb. 28, 2025), <https://www.kff.org/quick-take/u-s-measles-outbreaks-a-new-abnormal-in-a-time-of-vaccine-hesitancy/#:~:text=Most%20at%20risk%20from%20the,state%20legislatures%20in%20recent%20years> (last visited Mar. 16, 2026).

²⁵ See Paul Gastanaduy, et al., *Measles*, in PINK BOOK ch. 13 (Ctrs. For Disease Control & Prevention, 14th ed. 2021); Douglas J. Opel & Saad B. Omer, *Measles, Mandates, and Making Vaccination the Default Option*, 169 JAMA PEDIATRICS 303 (2015); *Measles*, 26 MORBIDITY & MORTALITY WKLY REP.109 (1977).

²⁶ Jessica R. Cataldi, et al., *Evidence-based strategies to increase vaccination uptake: a review*, 32 CURRENT OPINION IN PEDIATRICS 151 (2020).

pertussis incidence.²⁷ State-level studies show similar results: after Tdap school-entry requirements were adopted, adolescent vaccination coverage rose rapidly in multiple states, including increases from 29% to 83% within two years in New York and steady gains in Illinois following implementation of its middle- and high-school requirement.²⁸

Studies examining other vaccines demonstrate similar effects on coverage. After a seventh-grade hepatitis B vaccination requirement was implemented in San Diego, vaccination rates among students subject to the mandate reached 60%, compared with 13% among younger students before the requirement and 27% among older students not subject to it.²⁹ Likewise, amendments to Pennsylvania's school-entry requirements for meningococcal vaccination were associated with statistically significant increases in adolescent vaccination rates.³⁰

Further, the cascading impact of increased vaccination rates cannot be ignored. Modeling data concerning the measles vaccine illustrates the magnitude of this protection: a 1% annual decline in MMR immunization coverage could result in more than 17,000 additional measles cases per year by 2030, generating approximately \$1.5 billion in annual costs.³¹ Those costs extend well beyond direct medical treatment; they include the substantial public health expenditures required for outbreak investigation and containment, as well as lost productivity and missed work for families and caregivers. Before vaccine introduction, annual medical expenditures from

²⁷ Christopher S. Carpenter & Emily C. Lawler, *Direct and Spillover Effects of Middle School Vaccination Requirements*, 11 AMERICAN ECONOMIC JOURNAL 95, 96 (2019).

²⁸ Elyse Olshen Kharbanda, *Changes in Tdap and MC4 Vaccine Coverage Following Enactment of a Statewide Requirement*, 100 AMERICAN J. OF PUBLIC HEALTH 1635, 1636 (2010); Yaa Karikari, *Impact of Vaccine Mandate on Tdap Vaccination Coverage among Illinois Students 2014-2015*, 27 PAN AFRICAN MEDICAL JOURNAL 1 (2017).

²⁹ Francisco Averhoff, et al., *A Middle School Immunization Law Rapidly and Substantially Increases Immunization Coverage Among Adolescents*, 94 AMERICAN PUBLIC HEALTH ASSOC. 978, 978 (2004).

³⁰ Tuhina Srivastava, et al., *Impact of school-entry vaccination requirement changes on clinical practice implementation and adolescent vaccination rates in metropolitan Philadelphia*, 16 HUMAN VACCINES & IMMUNOTHERAPEUTICS 1155, 1155 (2020).

³¹ Dennis Thompson, *Small Drop In Measles Vaccinations Tied to Big Jump In Cases*, U.S. NEWS (Mar. 9, 2026), <https://www.usnews.com/news/health-news/articles/2026-03-09/small-drop-in-measles-vaccinations-tied-to-big-jump-in-cases> (last visited Mar. 19, 2026).

chickenpox hospitalizations and outpatient visits were \$84.9 million in 1994-1995, and dropped by 74% to \$22.1 million by 2002, seven years after varicella vaccination was introduced.³² From 1996-2020, the varicella immunization program was estimated to have saved \$23.4 billion in societal costs, and for every dollar spent on varicella vaccination, society saved \$1.70.³³ In other words, high vaccination coverage functions not only as a clinical safeguard but as an economic stabilizer.³⁴

b. Herd Immunity and Population Protection

Vaccination decisions affect the broader population, not only the individual receiving the vaccine. Many infectious diseases can only be sustained in a population when a sufficient number of susceptible individuals are present. When vaccination coverage reaches a high enough threshold, transmission chains break down and outbreaks are unlikely. This concept, commonly referred to as herd immunity, protects even those who cannot safely be vaccinated. Herd immunity is not an abstract concept; it is a well-studied phenomenon that occurs at rates that can be calculated.³⁵

The vaccination level required to maintain herd immunity varies by disease and reflects differences in contagiousness. Highly transmissible diseases require correspondingly higher levels of population immunity.³⁶ When coverage falls below those thresholds, particularly within

³² Fangjun Zhou, et al., *Impact of Varicella Vaccination on Health Care Utilization*, 294 JAMA 797 (2005).

³³ Fangjun Zhou, et al., *Health and Economic Impact of the United States Varicella Vaccination Program, 1996–2020*, 226 The J. of Infectious Diseases, S463, S466 (2022).

³⁴ *More Illness, Greater Cost Spotlight Brief*, Common Health Coalition (2026), https://commonhealthcoalition.org/wp-content/uploads/2026/02/SpotlightBrief_ChildImms.pdf (last visited Mar. 17, 2026).

³⁵ See Angel N. Desai & Maimuna S. Majumder, *What is Herd Immunity?*, 324 JAMA 2113 (2020) (“Herd immunity occurs when a significant portion of a population becomes immune to an infectious disease and the risk of spread from person to person decreases; those who are not immune are indirectly protected because ongoing disease spread is very small...The proportion of a population who must be immune to achieve herd immunity varies by disease.”).

³⁶ For example, 91-94% of the population must be vaccinated against measles to achieve herd immunity, and the remaining individuals would be protected because measles would not spread among those who are vaccinated. This threshold range varies by disease, including for mumps (86-93%), rubella (83–94%), varicella (86–91%), pertussis (90–94%), diphtheria (75–80%), and polio (80–86%). When coverage falls below these thresholds, particularly in

localized clusters, the risk of outbreaks increases. Even when a vaccine does not completely prevent infection in every individual, widespread immunization still reduces the number of susceptible hosts and interrupts chains of transmission, making herd immunity a critical public health principle.³⁷

The historical record thus shows the scale of harm these diseases once imposed and the dramatic reductions achieved through vaccination. But understanding why vaccination policies have long focused on schools requires recognizing another well-established epidemiological reality: infectious diseases spread most efficiently in settings where children gather in close and repeated contact.

c. Schools as High-Risk Environments for Transmission

Schools bring together large numbers of children in close proximity for extended periods of time. Classrooms, cafeterias, buses, and extracurricular activities create dense contact networks that allow infectious diseases to spread rapidly once introduced.³⁸ Given that communicable diseases spread through predictable biological mechanisms and that many childhood infections are transmitted person-to-person through respiratory droplets, aerosols, direct contact, or

localized clusters, the risk of an outbreak increases significantly. Pedro Plans-Rubio, *Evaluation of the establishment of herd immunity in the population by means of serological surveys and vaccination coverage*, 8 HUMAN VACCINES & IMMUNOTHERAPEUTICS 184 (2012).

³⁷ Arguments that polio vaccines do not prevent polio misunderstand the population-level dynamics of vaccination. Polio vaccination dramatically reduces susceptibility to paralytic disease and historically has reduced circulation of the virus itself when population coverage is high. The near elimination of polio in the United States following widespread vaccination demonstrates the population-level effect of maintaining high levels of immunity. These outcomes are consistent with the basic epidemiological principle that when the number of susceptible individuals falls below a critical threshold, sustained transmission becomes unlikely. *See supra* text accompanying note 3.

³⁸ *See e.g.*, Shuta Kikuchi, et al., *Quantification of droplet and contact transmission risks among elementary school students based on network analyses using video-recorded data*, 20 PLoS ONE 1, 2 (2025); Libby Richard, *Infectious Diseases Spike When Kids Return to School – Here’s What You Can Do About It*, CLINICAL ADVISOR (Aug. 20, 2024), <https://www.clinicaladvisor.com/features/infectious-diseases-spike-when-kids-return-to-school/> (last visited Mar. 16, 2026); Jean Maguire van Seventer & Natsha S. Hochberg, *Principles of Infectious Diseases: Transmission, Diagnosis, Prevention, and Control*, 6 INT’L ENCYCLOPEDIA OF PUBLIC HEALTH 22.

contaminated surfaces, settings in which children gather in close proximity facilitate rapid transmission.³⁹

Children may also be particularly susceptible to certain infections due to age-related immune development and patterns of social interaction.⁴⁰ Moreover, because with many diseases children frequently experience mild or atypical symptoms, infections may go unrecognized even as transmission occurs.⁴¹ Schools thus function not only as sites of concentrated exposure but also as amplification points through which infections can spread outward into households and the broader community.

Certain groups depend directly on high levels of community immunity for protection, including infants too young to be vaccinated, people who are immunocompromised, and those for whom vaccines are less effective due to underlying conditions.⁴² When vaccination coverage declines, these individuals lose the collective safety net they may rely upon to lessen risk of infection, particularly as these individuals are more likely to face adverse outcomes from disease exposure.⁴³

³⁹ *Id.*

⁴⁰ See *Why is my child always sick? A pediatrician answers your questions*, CHILDREN'S HOSPITAL OF ORANGE COUNTY (Aug. 18, 2022), <https://health.choc.org/why-is-my-child-always-sick-a-pediatrician-answers-your-questions/> (last visited Mar. 17, 2026) (“Children under 7 years old have immature immune systems...At school or daycare, young kids may spread germs more easily because they don’t know how to cough or sneeze while covering their mouths.”); A Katharina Simon, et al., *Evolution of the immune system in humans from infancy to old age*, 282 PROCEEDINGS B ROYAL SOC’Y 1, 3–5 (2015) (discussing the shaping of a child’s immune system by infections and vaccinations); Yue-Tong Li, et al., *Childhood infectious diseases: experiences and challenges*, 21 WORLD J. OF PEDIATRICS 755, 756 (2020) (“Compared with that of adults, the immature immune system of infants and young children plays a critical role in their heightened susceptibility to infectious diseases. This vulnerability stems from developmental differences in both innate and adaptive immunity, as well as microbiological and environmental factors unique to early life.”).

⁴¹ Pre-symptomatic and asymptomatic spread complicates efforts to control outbreaks through case-by-case exclusion or symptom screening alone. Because people can spread the disease before they realize they are sick, preventing it effectively requires actions that protect everyone, not just responses aimed at those who are already diagnosed.

⁴² Linda Washington-Brown & Rose Wimbish- Tompkins, *Vaccines, Herd Immunity, and COVID-19*, 32 ABNF J. 42 (2021).

⁴³ Angel N. Desai & Maimuna S. Majumder, *What is Herd Immunity?*, 324 JAMA 2113 (2020); *The Relationship Between Vaccines and Herd Immunity*, COLUMBIA MAILMAN SCHOOL OF PUBLIC HEALTH (Apr. 9, 2021), <https://www.publichealth.columbia.edu/news/relationship-between-vaccines-herd-immunity> (“...when not everyone in a population can access vaccination, herd immunity becomes vital in ensuring protection.”); *Infectious Diseases*

Children play a significant role in this dynamic. Children frequently introduce infections into households, exposing parents, grandparents, and medically vulnerable family members.⁴⁴ High vaccination coverage in schools therefore protects both students and the broader community.

In an industrialized society that requires universal education, schools function like transit terminals. Just as passengers from countless origins pass daily through a central station, nearly every child passes through the school doors. A pathogen introduced into that environment, like a traveler carrying contagion into a crowded train terminal, can quickly board many routes at once moving outward into homes, workplaces, and communities. Vaccination requirements operate as a form of ticketed entry control: ensuring that those who pass through this universal checkpoint are unlikely to spread the disease to others, preventing the station from becoming a distribution center for disease. Moreover, the vaccines received for school-entry are not just temporary shields. They provide long-lasting immunity, often for life, equipping each individual with protection into adulthood and strengthening the safety of the entire community over time.

For these reasons, school-entry vaccination requirements have long been recognized as a critical tool in preventing outbreaks both in educational settings and the communities they serve.

IV. Vaccine Requirements Pass Constitutional Muster Under Any Level of Scrutiny

a. Vaccine Requirements Are Neutral and Generally Applicable, and Therefore Subject Only to Rational Basis Review

and Immune-Compromised People, CHILDREN'S HOSPITAL OF PHILADELPHIA (2020), <https://www.chop.edu/sites/default/files/vaccine-education-center-infectious-diseases-immune-comp.pdf>; See Cayman Doran, *From policy to pathogens: Declining vaccination rates and preventable disease resurgence*, INFECTIOUS DISEASES SOCIETY OF AMERICA (Mar. 9, 2026), <https://www.idsociety.org/science-speaks-blog/2026/from-policy-to-pathogens-declining-vaccination-rates-and-preventable-disease-resurgence/> (last visited Mar. 17, 2026).

⁴⁴ See e.g., Carrie L. Byington, et al., *Community Surveillance of Respiratory Viruses Among Families in the Utah Better Identification of Germs-Longitudinal Viral Epidemiology (BIG-LoVE) Study*, 61 CLINICAL INFECTIOUS DISEASES 1217, 1221 (2015) (finding that the “presence of children in the household was associated with an increased likelihood of viral detection); Fang Li, et al., *Household transmission of SARS-CoV-2 and risk factors for susceptibility and infectivity in Wuhan*, 21 THE LANCET INFECTIOUS DISEASES 617, 625 (2021) (finding that “children and adolescents were more likely to infect others [with COVID-19] than were older age groups).

Vaccination requirements are, by design, neutral and generally applicable. They do not target religious beliefs or any particular group; instead, they simply establish that children must be vaccinated in order to attend school or similar communal settings, with the same public health standard applied to everyone. This neutrality subjects such laws to rational basis review.⁴⁵ Under *Jacobson v. Massachusetts*, states may impose such requirements to prevent the spread of disease while permitting narrow medical exemptions for those whom vaccination would be medically unsafe, and *Zucht v. King* extended that logic to uphold school vaccination mandates even in the absence of an active outbreak.⁴⁶

The Constitution does not require exemptions from a neutral public health law every time someone claims it infringes on religious liberty. As the Court recognized in *Prince v. Massachusetts*, the “right to practice religion freely does not include liberty to expose the community or the child to communicable disease.”⁴⁷

b. Even if Strict Scrutiny Applies, Vaccine Mandates Without Religious Exemptions Are the Least Restrictive Means for States to Effectively Protect Children from Infectious Disease

Heightened Scrutiny

Even if vaccination requirements were subject to heightened scrutiny, they would still satisfy constitutional review. Courts have long recognized that preventing the spread of

⁴⁵ See *We The Patriots USA, Inc. v. Connecticut Off. of Early Childhood Dev.*, 76 F.4th 130 (2d Cir. 2023) (the court upheld Connecticut’s law eliminating religious exemptions, finding the statute generally applicable and rationally related to public health, while retaining medical exemptions); see *Does 1-6 v. Mills*, 566 F. Supp. 3d 34 (D. Me.), *aff’d*, 16 F.4th 20 (1st Cir. 2021), (a federal district court upheld a regulation requiring healthcare workers to be vaccinated against COVID-19 without religious exemptions, finding medical exemptions were a necessary component of a reasoned public health response); see *Zucht v. King*, 260 U.S. 174 (1922) (upholding neutral school vaccination requirement under rational basis review; law applied generally and did not single out religion); see *F.F. v. State*, 194 A.D.3d 80, 88 (2021), holding that “the repeal [of religious exemptions] is a neutral law of general applicability, not based upon hostility towards religion and not infringing upon the free exercise of religion.”

⁴⁶ *Jacobson v. Massachusetts*, 197 U.S. 11 (1905); *Zucht v. King*, 260 U.S. 174 (1922).

⁴⁷ *Prince v. Massachusetts*, 321 U.S. 158, 166-67 (1944). While *Prince v. Massachusetts* predates the formal use of the term “rational basis,” the Court’s analysis resembled that standard by giving deference to the state’s interest in child welfare over parental claims of religious liberty.

communicable disease constitutes a compelling governmental interest, including when the health and safety of children are at stake.⁴⁸ And where a public health measure is designed to prevent the transmission of serious infectious disease, courts have concluded that vaccination requirements are narrowly tailored to achieve that objective.⁴⁹

While laws that target religion or selectively burden religious conduct trigger heightened scrutiny, the law does not hold that every law burdening religiously motivated conduct is suspect, nor does it require exemptions whenever a statute contains any secular exception.⁵⁰ Vaccination requirements do not substantially burden religious exercise.⁵¹ Further, the presence of limited medical exemptions, designed to protect individuals who cannot safely be vaccinated due to their individual health status, does not present a secular versus non-secular dichotomy and therefore does not render the law comparable to the discretionary or secular-comparator regimes at issue in *Fulton v. City of Philadelphia*,⁵² *Tandon v. Newsom*, or other pandemic-era cases addressing restrictions on religious gatherings.⁵³ Because of this, vaccination mandates are properly evaluated

⁴⁸ *Workman v. Mingo Cnty. Bd. of Educ.*, 419 F. App'x 348 (4th Cir. 2011).

⁴⁹ For example, in *McCarthy v. Boozman*, a federal district court held that while a state may not structure a religious exemption discriminatorily, the Constitution does not require the state to provide any religious exemption at all. *McCarthy v. Boozman*, 212 F. Supp. 2d 945 (W.D. Ark. 2002).

⁵⁰ See *Church of the Lukumi Babalu Aye, Inc. v. City of Hialeah*, 508 U.S. 520, 543–547 (1993).

⁵¹ In *Sherbert v. Verner*, the Court applied strict scrutiny to a denial of unemployment benefits that substantially burdened religious practice, concluding that the government must demonstrate a compelling interest and that the means chosen are the least restrictive. *Sherbert v. Verner*, 374 U.S. 398 (1963) (abrogated on other grounds). Even under this heightened framework, however, the Court did not suggest that religiously motivated conduct is categorically immune from regulation when it threatens public health. Indeed, *Sherbert* cited *Jacobson* and *Prince* in recognizing that limits on Free Exercise have been found constitutional where “[t]he conduct or actions so regulated have invariably posed some substantial threat to public safety, peace or order.” *Id.* at 403.

⁵² Law not generally applicable because city could grant discretionary secular exemptions while denying religious ones, in contrast to vaccination mandates limited medical exemptions, which serve the same public health objective for all. *Fulton v. City of Philadelphia*, 593 U.S. 522, 534 (2021).

⁵³ Strict scrutiny applied where law treated comparable secular gatherings more favorably than religious ones, creating a discretionary religious exception, unlike narrow medical exemptions tied to individual health. *Tandon v. Newsom*, 59 U.S. 61, 62 (2021). See also *Roman Cath. Diocese of Brooklyn v. Cuomo*, 592 U.S. 14 (2020), and other related pandemic-era cases addressing restrictions on religious gatherings, which are inapposite here because the laws at issue were not neutral or generally applicable (targeting religious activity while permitting comparable secular conduct). By contrast, West Virginia’s school vaccination requirements apply equally to all students, regardless of religious affiliation, and constitute neutral, generally applicable public health measures.

under the rational-basis standard of *Employment Division v. Smith* rather than heightened scrutiny.⁵⁴ Nonetheless, even in jurisdictions applying statutory Religious Freedom Restoration Act (“RFRA”)-style strict scrutiny, vaccination requirements should be upheld because they directly advance a compelling interest and are narrowly tailored to that end.

Least Restrictive Means

West Virginia is not required to tolerate predictable, preventable infectious disease to accommodate exemptions in favor of avoidable circulation of disease. Even when laws affect religious liberty, the least restrictive means standard does not compel communities to accept recurring outbreaks, preventable hospitalizations, or deaths when no equally effective alternative exists. The constitutional inquiry asks whether the challenged measure is necessary to achieve the state’s interest in preventing harm.⁵⁵

If the state’s interest is defined, as the epidemiological record supports, as not merely the reduction of cases, but the prevention of transmission and the suppression of morbidity and mortality to the lowest level reasonably achievable, any policy that predictably reduces coverage cannot qualify as an adequate alternative. School vaccination mandates without religious exemptions achieve what other measures cannot: they maintain the high coverage levels required to prevent transmission and protect the broader community.⁵⁶ That conclusion reflects hard-earned experience: before widespread vaccination, public health authorities relied on reactive, piecemeal

⁵⁴ In *Employment Division v. Smith*, the Court held that neutral, generally applicable laws do not violate the Free Exercise Clause simply because they incidentally burden religious exercise. Under *Smith*, a law that is neutral and generally applicable need not be justified by a compelling interest. Vaccination requirements, that apply to all students, without regard to religious affiliation, fall squarely within that category. *Emp. Div., Dep’t of Hum. Res. of Oregon v. Smith*, 494 U.S. 872, 889 (1990).

⁵⁵ See *Ashcroft v. ACLU*, 542 U.S. 656 (2004).

⁵⁶ See Heather Tomlinson, *The Impact of Non-Medical Vaccine Exemptions on Childhood Vaccination Rates*, ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICIALS (Mar. 16, 2023), <https://www.astho.org/communications/blog/impact-of-non-medical-vaccine-exemptions-on-childhood-vaccination-rates/> (last visited Mar. 19, 2026).

interventions, isolating cases, closing schools, and tracing contacts in a futile game of “whack-a-mole” that failed to stop transmission and allowed outbreaks to recur. By contrast, broad non-medical exemptions do not simply accommodate individual choice; they function as a mechanism through which the regulatory objective fails. Further, the existence of other everyday activities, such as attending basketball games, sports practices, or informal home-school co-ops, does not undermine West Virginia’s vaccination requirements. These activities involve voluntary, transient interactions among individuals, in contrast to school attendance, which is compelled and structured by the government. Religious exemptions operate as a government-created policy that permits sustained concentrations of unvaccinated individuals in settings where prolonged, repeated contact occurs. Isolated exposure at a basketball game or in a homeschool setting does not create the same epidemiological conditions for outbreaks and therefore does not present a comparable risk to public health.⁵⁷

Even if strict scrutiny applies, vaccination mandates without non-medical exemptions satisfy it. Epidemiological evidence shows such mandates are necessary to prevent avoidable transmission, illness, and death, and no less restrictive policy achieves the State’s compelling interest with comparable effectiveness.⁵⁸

V. The Relative Purposes and Impacts of Medical Versus Religious Vaccine Exemptions

a. Medical Exemption: Narrow, Evidence-Based, and Constitutionally Consistent

⁵⁷ Constitutional scrutiny does not require West Virginia to eliminate all conceivable risks; it requires only that West Virginia’s chosen measure be reasonably related to preventing a well-documented and administrable source of disease transmission. Regulating school-entry is materially different from regulating voluntary activities precisely because it addresses government-facilitated concentrations of susceptible hosts, which are the principal drivers of outbreak risk.

⁵⁸ See Heather Tomlinson, *The Impact of Non-Medical Vaccine Exemptions on Childhood Vaccination Rates*, ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICIALS (Mar. 16, 2023), <https://www.astho.org/communications/blog/impact-of-non-medical-vaccine-exemptions-on-childhood-vaccination-rates/> (last visited Mar. 19, 2026).; Kevin M. Malone and Alan R. Hinman, *Vaccination Mandates: The Public Health Imperative and Individual Rights*, in *Vaccination Mandates* ch. 13 (Ctrs. for Disease Control & Prevention, 2003).

Medical exemptions are fundamentally distinct from religious or other non-medical exemptions because they are grounded in individualized, evidence-based clinical determinations of safety. They apply in situations where vaccination could pose a significant health risk to a particular individual, such as an immunological impairment or severe allergic reaction to a vaccine component, that renders vaccination unsafe for a particular individual. In principle, these exemptions are tied to recognized medical contraindications rather than personal or philosophical objections. Such contraindications are rare, but they reflect a genuine medical vulnerability.⁵⁹ Properly confined, medical exemptions preserve the core public health objective: maximizing community protection while avoiding harm to those who cannot safely be vaccinated. Because these exemptions are extremely rare, they do not meaningfully undermine efforts to achieve high vaccination rates. Medical exemptions are fully consistent with constitutional doctrine.

b. The Public Health Consequences of Non-Medical Exemptions

Religious and other non-medical exemptions operate differently. They are not tied to individualized medical risk, are not limited by scientific criteria, and are often geographically or socially clustered. As a result, they have resulted in pockets of un- and under-vaccinated individuals or “hot spots” where herd immunity is compromised.⁶⁰ Non-scientific exemption policies are frequently abused and are associated with an increase in exemption rates.⁶¹ For these reasons, expansive non-medical exemptions undermine the structural integrity of vaccination

⁵⁹ In the 2022–23 school year, 3.0% of kindergartners had exemptions from required school-entry vaccines (MMR, polio, DTaP, and varicella), including just 0.2% for medical reasons. See Rane Seither, MPH, et al., *Coverage with Selected Vaccines and Exemption from School Vaccine Requirements Among Children in Kindergarten — United States, 2022–23 School Year*, 72 MORBIDITY & MORTALITY WKLY. REP 1217, 1219 (Nov. 10, 2023).

⁶⁰ Carlin Aloe, et al., *Geospatial analysis of nonmedical vaccine exemptions and pertussis outbreaks in the United States*, 27 PROCEEDINGS OF THE NAT’L ACAD. OF SCIENCES OF THE UNITED STATES OF AMERICA 7101, 7104 (2017).

⁶¹ Eileen Wang, et al., *Nonmedical exemptions from school immunization requirements: a systematic review*, 104 AMERICAN J. OF PUBLIC HEALTH e62, e81 (2014).

requirements and jeopardize population-level vaccination rates in ways that medical exemptions cannot.

Studies have shown that non-medical exemption policies dramatically undermine the integrity of vaccination requirements. A 2026 study of kindergarten exemption data, compiled by CDC from 2011–2023, found that in four states that repealed non-medical exemptions, overall exemption rates fell by 3.2% within three years. Compared to states that did not repeal such exemptions, vaccination coverage increased by 4.1%, 2.8%, 4.0%, and 3.8% for DTap, HepB, MMR, and polio, respectively, with minimal substitution of medical exemptions.⁶² Several other specific examples from states that abolished non-medical exemptions in favor of increased disease protection include:

- Following a 2019 measles outbreak and the removal of non-medical exemptions for the MMR vaccine, exemption rates in the state of Washington declined by 41% and vaccination rates increased.⁶³
- In California, Senate Bill 277 eliminated non-medical exemptions in 2016. Kindergarteners not up to date on vaccinations declined from 7.15% to 4.42% in the first year. Subsequent analyses estimated a 3.3% increase in MMR coverage and a 2.4% reduction in non-medical exemptions statewide, with even larger gains at the county level (a 4.3% increase in overall vaccination and a 3.9% decrease in non-medical exemptions).⁶⁴

⁶² Anthony Bald, et al., *State Repeal of Nonmedical Vaccine Exemptions and Kindergarten Vaccination Rates*, 180 JAMA Pediatrics 56 (2025).

⁶³ Ari Asercion, *Removing Personal Belief Exemptions for the Measles, Mumps, and Rubella Vaccine School Requirement: The Effects on Immunization Rates*, UNIV. OF WASH. (May 22, 2023), <https://epi.washington.edu/news/removing-personal-belief-exemptions-for-the-measles-mumps-and-rubella-vaccine-school-requirement-the-effects-on-immunization-rates/> (last visited Mar. 17, 2026).

⁶⁴ Sindiso Nyathi, et al., *The 2016 California policy to eliminate nonmedical vaccine exemptions and changes in vaccine coverage: An empirical policy analysis*, 16 PLOS MEDICINE 1, 8 (2019).

- In New York, repeal of non-medical exemptions in 2019 was associated with a 5.5% increase in vaccination coverage in nonpublic schools and a 0.9% increase in public schools, without corresponding growth in medical exemptions.⁶⁵

Conversely, states that have experienced declining vaccination coverage or that have broadened access to non-medical exemptions have seen the reemergence of preventable disease.⁶⁶ States that made access to exemptions easier had higher non-medical exemption rates than those states with more difficult exemption policies. The mean exemption rate increased by an average of 6% per year from 1991–2004 among states that offered exemptions on the basis of personal beliefs.⁶⁷ One analysis demonstrated that children who have philosophical and religious exemptions from vaccines were 22.2 times more likely to acquire measles and 5.9 times more likely to acquire whooping cough than vaccinated children.⁶⁸ Additionally, an analysis of non-medical exemption policies for measles vaccination found that a state with easy non-medical exemption policies is 140% more likely to experience a measles outbreak compared with states with medium non-medical exemption policies and 190% more likely to experience a measles outbreak compared to states with difficult non-medical exemption policies.⁶⁹ Outbreaks of measles and pertussis, for example, have been associated with clusters of under-vaccinated populations.⁷⁰

⁶⁵ John W. Correia, et al., *School Vaccine Coverage and Medical Exemption Uptake After the New York State Repeal of Nonmedical Vaccination Exemptions*, 7 JAMA NETWORK 1,1 (2024).

⁶⁶ See Robert A Bednarczyk, et al., *Current landscape of nonmedical vaccination exemptions in the United States: impact of policy changes*, 18 EXPERT REVIEW OF VACCINES 175 (2019) (Reviewing the impact of exemptions on disease incidence, for example noting that in the case of pertussis “[a]n analysis of 13 years of non-medical exemptions data found that not only did states with easier policies for obtain exemptions have higher exemptions rates, but they also had approximately 50% higher pertussis incidence.”).

⁶⁷ Saad B. Omer, et al., *Nonmedical exemptions to school immunization requirements: secular trends and association of state policies with pertussis incidence*, 296 JAMA 1757 (2006).

⁶⁸ D R Feikin, et al., *Individual and community risks of measles and pertussis associated with personal exemptions to immunization*, 284 JAMA 3145 (2000).

⁶⁹ Melanie D. Whittington, et al., *Impact of Nonmedical Vaccine Exemption Policies on the Health and Economic Burden of Measles*, 17 Immunization 571 (2017).

⁷⁰ Saad B. Omer, et al., *Nonmedical Exemptions to School Immunization Requirements Secular Trends and Association of State Policies With Pertussis Incidence*, 296 JAMA 1757 (2006) (“Nonmedical exemptions tend to be geographically clustered, providing the critical mass of susceptibles and increasing individual and community

c. The Tale of Two Outliers: How the Mississippi and West Virginia Exemption Stories Can Follow Two Different Paths

In 2019, the United States experienced its then largest measles outbreak in decades, with more than 1,200 confirmed cases nationwide. Nearly every state reported infections. Two of those which did not, Mississippi and West Virginia, are set apart from the other states with confirmed infections by the strength of their laws, as neither state allowed religious exemptions and only permitted medical exemptions.⁷¹

Mississippi's approach was reinforced by the state supreme court's 1979 decision in *Brown v. Stone*, which invalidated a statutory religious exemption to school vaccination requirements, concluding that the exemption violated equal protection principles because it undermined the State's interest in protecting children from disease.⁷² The court, in fact, recognized that should one child be granted an exemption, that exemption effectively imposes that religious practice on all of the child's classmates by subjecting them to an increased, non-consensual risk of deadly disease.⁷³

That framework changed in Mississippi in 2023, following a federal district court ruling requiring the state to begin allowing religious exemptions.⁷⁴ In the first full school year under the new policy, approximately 2,200 religious exemptions were granted, and the state's kindergarten MMR coverage declined from above 99% to approximately 97.4%. States that now experience recurring measles outbreaks rarely began with low vaccination rates; rather, they arrived there

risks...Social clustering of exemptions increases the risk of disease outbreaks, as was recently exemplified in an Indiana measles outbreak.”); Saad B. Omer, et al., *Geographic clustering of nonmedical exemptions to school immunization requirements and associations with geographic clustering of pertussis*, 168 *American J. of Epidemiology* 1389 (2008); Carlin Aloe, et al., *Geospatial analysis of nonmedical vaccine exemptions and pertussis outbreaks in the United States*, 27 *PROCEEDINGS OF THE NAT'L ACAD. OF SCIENCES OF THE UNITED STATES OF AMERICA* 7101, 7104 (2017).

⁷¹ *Measles Cases and Outbreaks*, Ctrs. For Disease Control & Prevention (last updated Mar. 13, 2026), <https://www.cdc.gov/measles/cases-outbreaks.html> (last visited Mar. 18, 2026) (including data from the 2019 measles outbreak).

⁷² *Brown v. Stone*, 378 So. 2d 218, 223 (Miss. 1979).

⁷³ *Id.* at 222.

⁷⁴ *Bosarge v. Edney*, 669 F. Supp. 3d 598, 617 (S.D. Miss. 2023).

through gradual erosion after non-medical exemptions became available.⁷⁵ Each incremental decline reduces the margin of safety that previously prevented sustained transmission. If Mississippi continues along the trajectory observed in other states that allow exemptions, its vaccination coverage could move closer to the levels that have already produced outbreaks in those other states.

In that sense, the legal shift forced by *Bosarge* has placed Mississippi on a path away from the suppression model historically associated with *Zucht v. King* and toward the same policy framework that has produced instability in other jurisdictions. The consequences of that shift may not appear immediately as outbreaks depend on the chance introduction of the virus, but the structural change is already evident. The system has moved from one designed to prevent transmission outright to one increasingly dependent on maintaining a shrinking statistical buffer.

West Virginia therefore now stands at a crossroads. It can maintain the policy that has kept its vaccination rates among the highest in the nation and spared its communities from the resurgence of measles and similar illnesses. Or it can adopt an exemption structure that, as experience across the country demonstrates, risks reopening the door to diseases its children have not had to face in decades. History has shown what these diseases do to children. When vaccination rates fall, the consequences are not theoretical. Measles alone can cause pneumonia, encephalitis, and death, particularly among young children. Outbreaks mean emergency rooms filled with infants too young to be vaccinated, schools forced to close classrooms, and families watching their children endure hospitalizations for illnesses that modern medicine already knows how to prevent. These are not distant historical memories; they are the realities states have faced whenever

⁷⁵ Ashley Gromis & Ka-Yuet Liu, *Spatial Clustering of Vaccine Exemptions on the Risk of a Measles Outbreak*, 149 PEDIATRICS e2021050971(2021).

vaccination coverage drops below the levels necessary to stop transmission. The law does not require, nor does it justify, that West Virginia take this gamble.

VI. Conclusion

The record is consistent and predictable. High, sustained vaccination coverage, supported by strong, uniformly applied school-entry requirements, suppresses transmission and protects medically vulnerable individuals. When non-medical exemptions expand and coverage declines, those protections erode. Narrow medical exemptions preserve constitutional and clinical integrity; expansive non-medical exemptions weaken the very public health framework vaccination mandates were designed to secure. Moreover, they are the least restrictive means for achieving the state's interest in suppressing disease to the maximum extent possible.

Respectfully Submitted,

/s/ Carte P. Goodwin

Carte P. Goodwin (WV Bar No. 8039)

Dylan J. George (WV Bar No. 14253)

FBT GIBBONS LLP

United Bank – Suite 1100

500 Virginia Street, East

Charleston, WV 25301

(304) 345-0111 / (304) 345-0115 (f)

/s/ Richard H. Hughes IV

Richard H. Hughes IV (*pro hac vice
forthcoming*)

William Walters (*pro hac vice forthcoming*)

EPSTEIN BECKER & GREEN, P.C.

1227 25th Street, N.W., Suite 700

Washington, DC 20037

(202) 861-0900 / (202) 296-2882 (f)

Daniella R. Lee (*pro hac vice forthcoming*)

EPSTEIN BECKER & GREEN, P.C.

201 East Kennedy Blvd., Suite 1260

Tampa, FL 33602

(813) 367-9454 / (813) 367-9441 (f)

Kyla Perrotta (*pro hac vice forthcoming*)

EPSTEIN BECKER & GREEN, P.C.

875 Third Avenue

New York, NY 10022

(212) 351-4500 / (212) 878-8600 (f)

Counsel for the Amici Curiae

IN THE SUPREME COURT OF APPEALS
OF WEST VIRGINIA

**West Virginia Board of Education, Nancy J. White,
in her capacity as President of the Board of Education,
Victor Gabriel, F. Scott Rotruck, L. Paul Hardesty,
Robert W. Dunlevy, Christopher Stansbury,
Deborah Sullivan, Gregory Wooten, Sarah Armstrong
Tucker, and Cathy Justice all in their capacities as
members of the West Virginia Board of Education,
Michelle Blatt, in her official capacity as State Superintendent
of Schools, Raleigh County Board of Education, Larry Ford,
Richard Snuffer, Charlotte Hutches, Marie Hamrick, and Marsha Smith,
all in their official capacities as members of the Raleigh County Board
of Education, and Serena L. Starcher, in her official capacity
as Superintendent, Raleigh County Board of Education, and
Jane Doe**

Petitioners

v.

**MIRANDA G., individually and on behalf of her minor
child A.G., and Carley H., individually and on behalf of her minor E.G.**

Respondents

CERTIFICATE OF SERVICE

I, Carte P. Goodwin, hereby certify that on this 26 day of March, 2026, that I electronically filed the foregoing **Amicus Brief on behalf of Amici Curiae** using the File & ServeXpress system which sent a Notice of Electronic Filing to, and constitutes service on, counsel of record.

/s/ Carte P. Goodwin
Carte P. Goodwin, Esq.