



June 4, 2019

**State Legislation to Increase
Vaccination Coverage**
Panel Introduction

Tammy R. Beckham, DVM, PhD
Acting Director, National Vaccine Program Office



Vaccine Mandates: An Overview of Evidence

Saad B. Omer, MBBS MPH PhD

William H. Foege Professor of Global Health
Professor of Epidemiology and Pediatrics

EMORY UNIVERSITY



@SaadOmer3

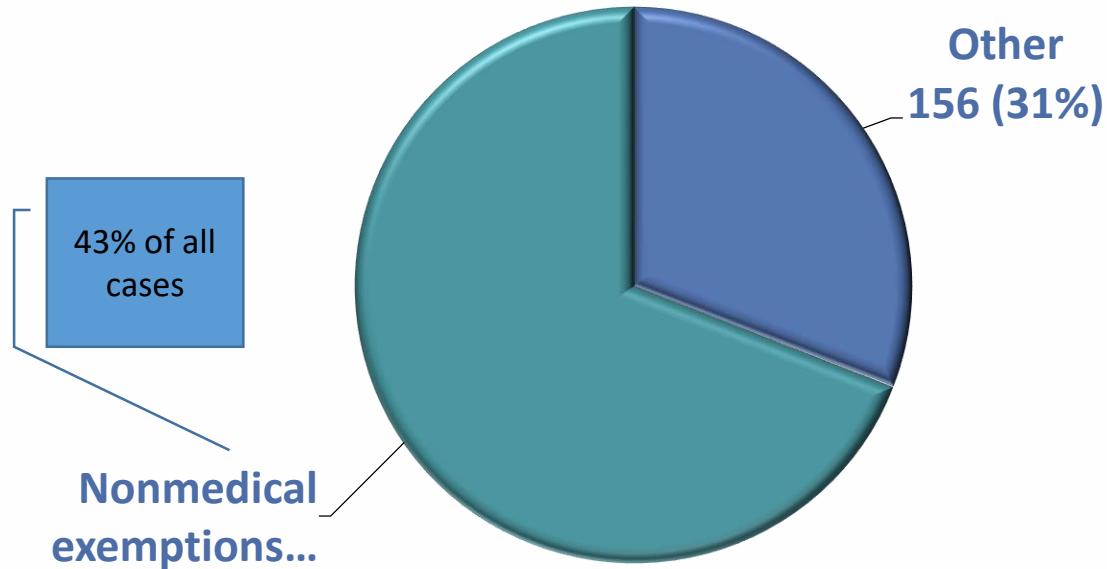
Conflicts?



None

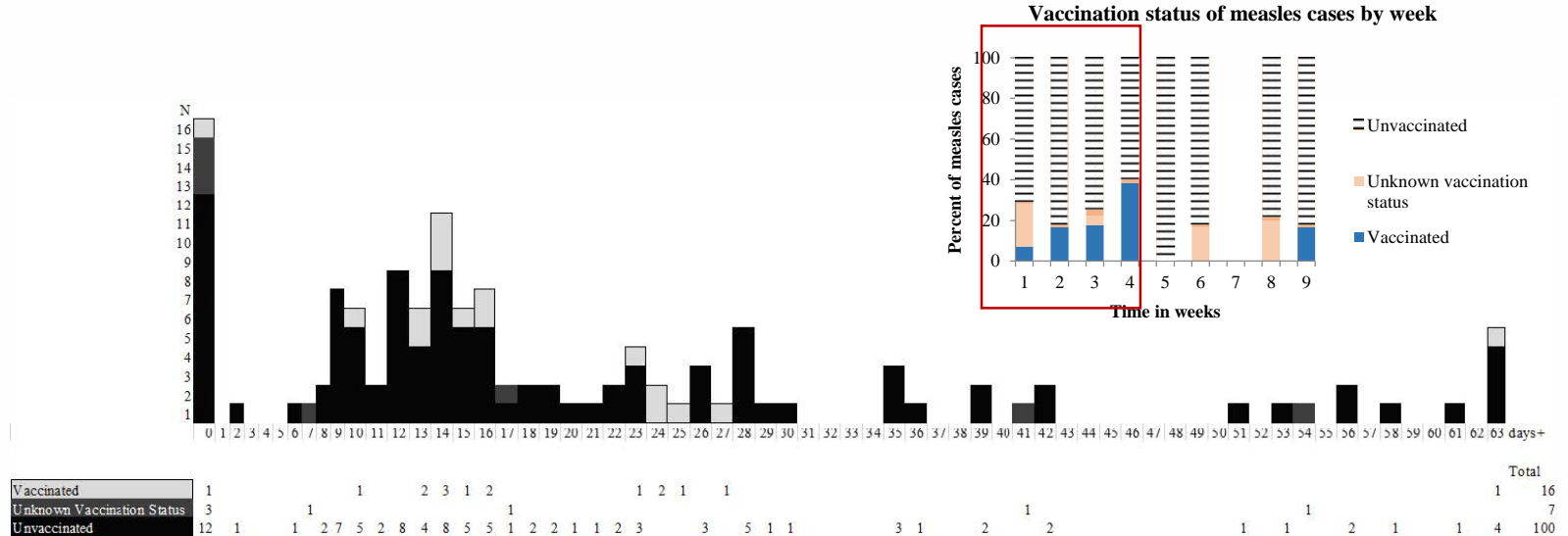
Reasons For Non-Vaccination Among Measles Cases

2000-2015



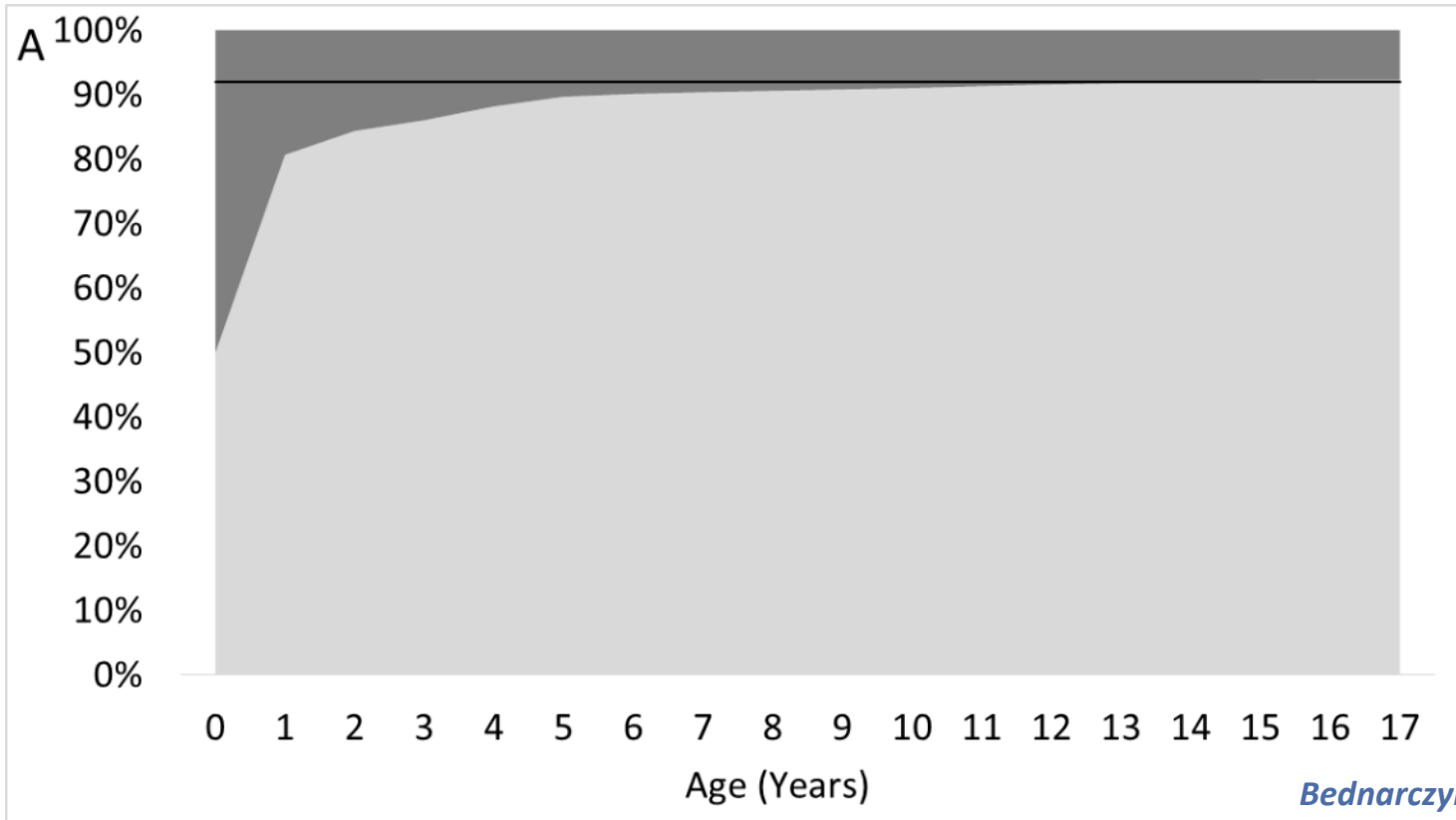
Cumulative Epidemic Curve of 16 Measles Outbreaks

2000 - 2015, United States



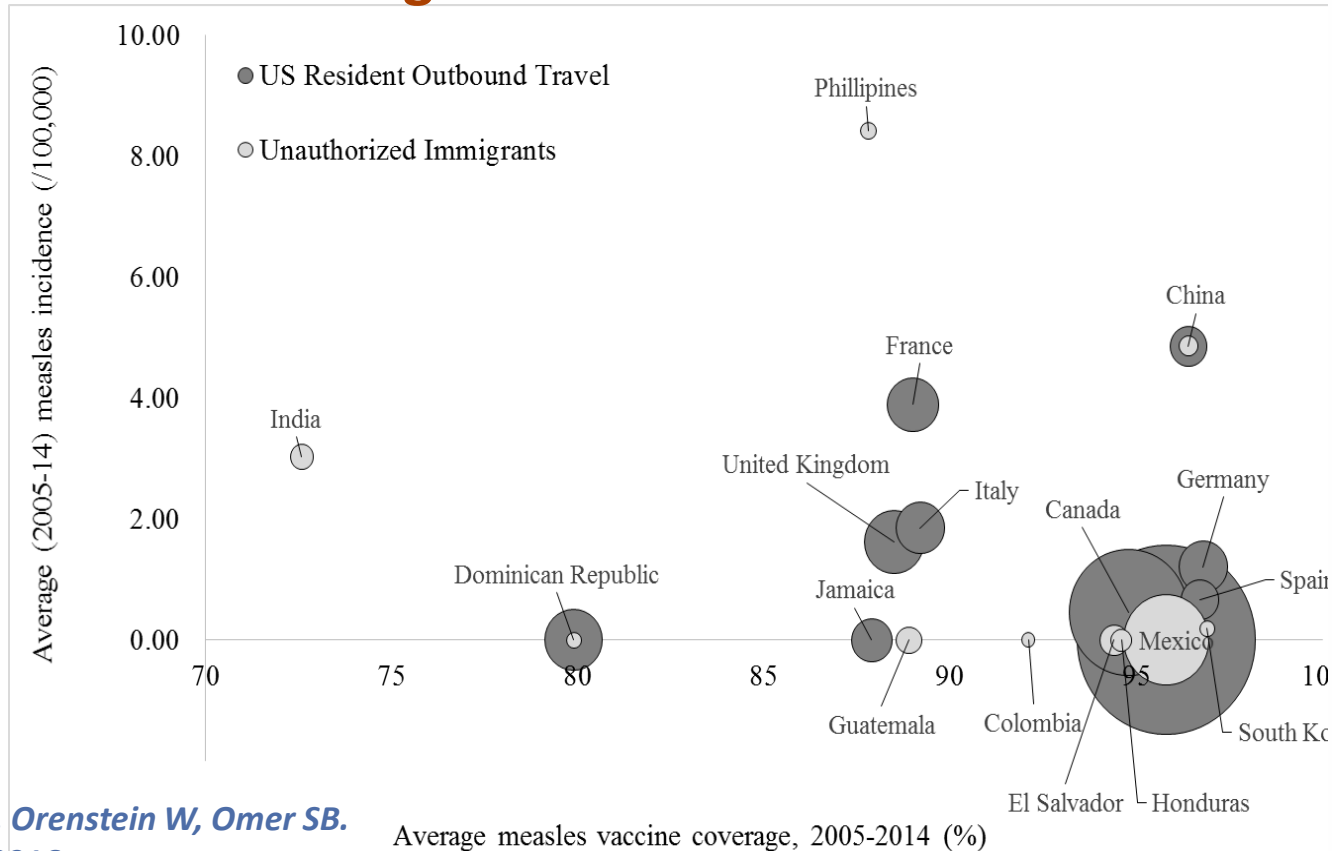
Phadke et al. JAMA, 2016

Measles-susceptible Children in the United States



*Bednarczyk, Orenstein, Omer.
Am. J. Epi, 2016*

Measles Incidence & Vaccine Coverage For Top Countries for Immigration and Outbound Travel



Bednarczyk RA, Orenstein W, Omer SB.
J Travel Med., 2016.

Table 4. Likely Impact of Interventions to Increase Vaccination Coverage Based on Available Evidence

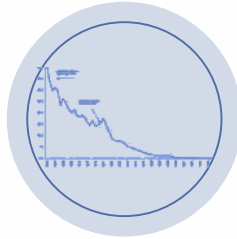
Article section	Intervention	Likely impact	Especially effective when...	Amount of evidence		Amount of causal evidence	
				Any behavior	Vacc	Vacc	Vacc in LMICs
2	Messages that increase disease risk appraisals	○	People have low disease-risk appraisals or have become complacent about disease risk	2	2	1	1
2	Education campaigns that increase confidence	○	People have low confidence that vaccination is effective and safe	2	2	1	1
2	Decision aids	○	People initially do not agree to vaccination because they have questions	2	1	1	0
2	Motivational interviewing	○	People initially express ambivalence about vaccination	2	1	1	0
3	Descriptive norm messages	●	People are unsure or misunderstand what others are doing	2	2	0	0
3	Social network interventions that build on contagion	●	People are at least minimally connected to a social network	2	0	0	0
3	Messages that change altruism or free-riding beliefs	○	People have low altruism or high free-riding motivation	2	2	0	0
2, 3, 4	Healthcare provider recommendations	●	People have favorable, ambivalent, or unfavorable intentions	2	2	2	0
4	Presumptive healthcare provider recommendations	●	People have favorable or ambivalent intentions	2	1	1	0
4	Reminders and recalls	●	People have favorable intentions but do not get vaccinated	2	2	2	1
4	Implementation intention interventions	●	People have favorable intentions but do not get vaccinated	2	1	1	1
4	Mere-measurement interventions	●	People have favorable intentions but do not get vaccinated	2	1	1	0
4	On site vaccination	●	People have favorable intentions but do not get vaccinated	2	2	2	2
4	Default appointments	●	People have favorable intentions but do not get vaccinated	2	1	1	0
4	Incentives	●	People have favorable, ambivalent, or unfavorable intentions	2	2	2	2
4	Vaccination requirements	●	Vaccination rates are already high; most people affected by requirement support it	2	2	1	0

Note: Vacc = vaccination coverage; LMICs = low- or middle-income countries; ○ = little or no impact; ● = substantial impact; ● = substantial impact; 0 = no evidence; 1 = some evidence; 2 = substantial evidence. Conclusions about evidence are based on consensus among authors who considered the available evidence, including the number of available studies, evidence for causal association, the quality of the studies, and the size of the effect. See the relevant section of the article for more information on the interventions.

School Immunization Requirements



State laws
(not
federal)



Major role in low
rates of vaccine
preventable
diseases

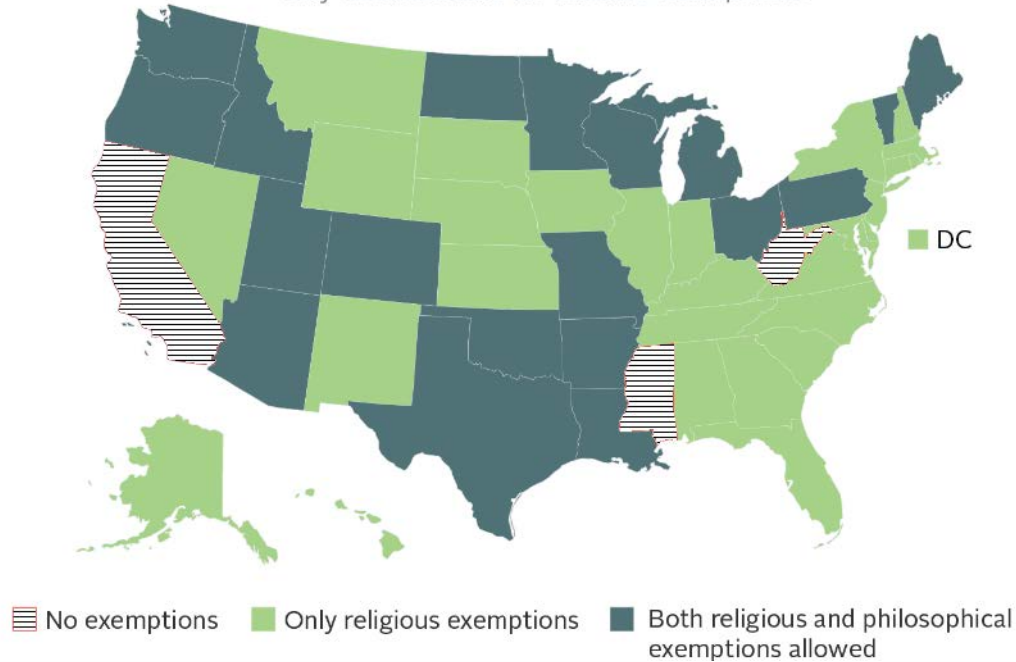


3 types of
exemptions allowed

1. Medical
2. Religious
3. Personal belief
(philosophical)

School vaccine exemptions by state

Only 3 states have no vaccine exemptions

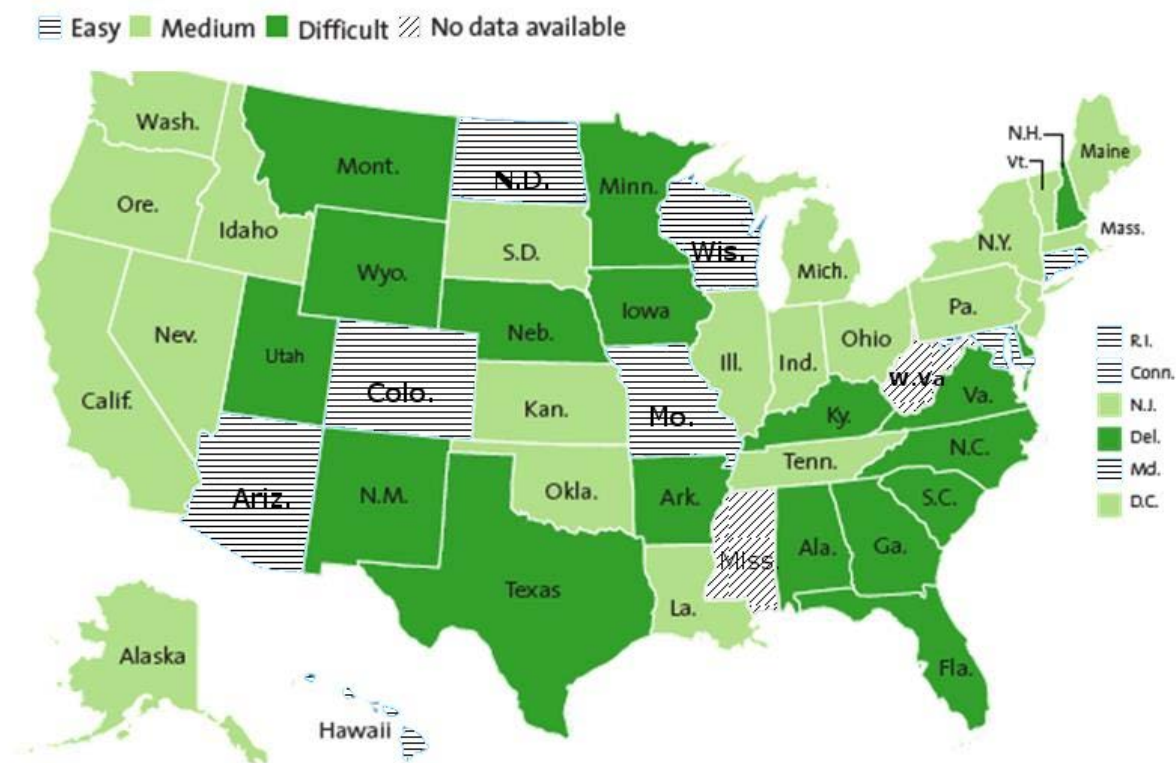


All states have medical exemptions.

Missouri's philosophical exemption only applies to daycare, preschool and nursery school.

SOURCE: National Conference of State Legislatures

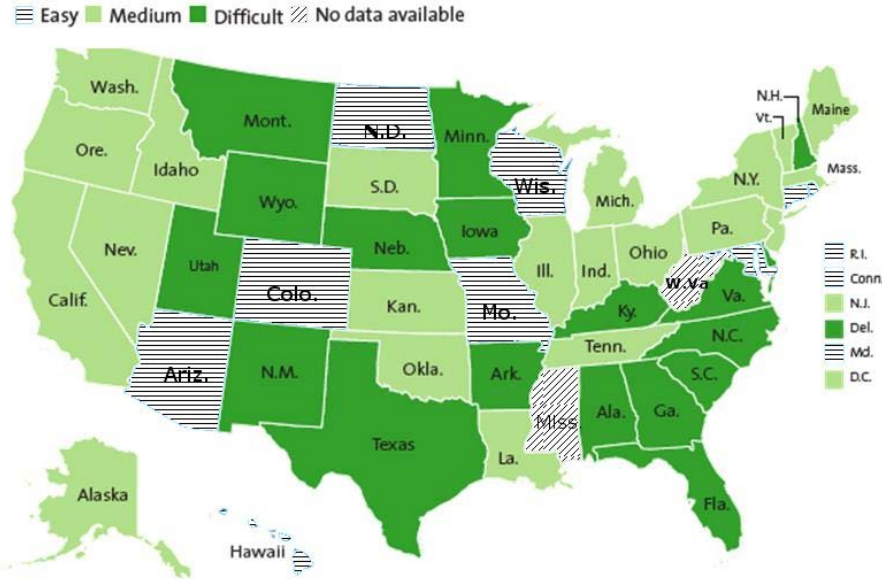
Ease of Obtaining Vaccine Exemptions –by State



Omer et al., New England Journal of Medicine . 2012

Figure (with updated 2013 data) created by Mother Jones

Ease of Obtaining Vaccine Exemptions in the U.S. - by State



Exemption Policies & Whooping Cough Incidence, 1986-2004

Exemption ease	Incidence Rate Ratio
Difficult	Reference
Medium	1.35 (0.96-1.91)
Easy	1.53 (1.10-2.14)

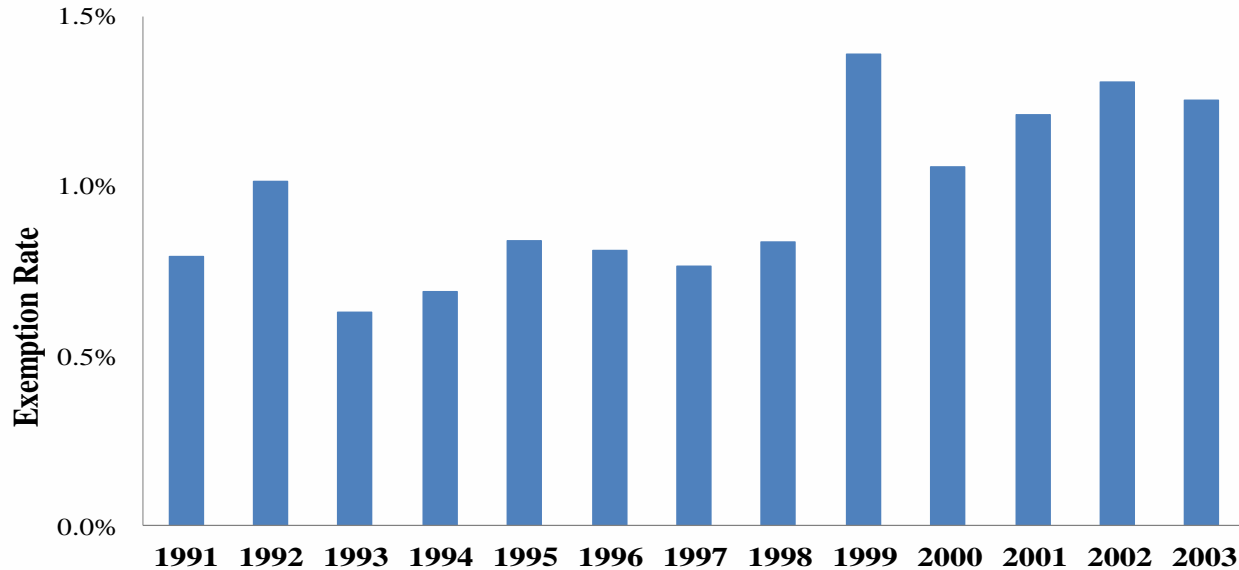
Omer et al., *New England Journal of Medicine* . 2012

Figure (with updated 2013 data) created by Mother Jones

Omer et al., *JAMA*, 2006

Non-Medical Exemptions by Year

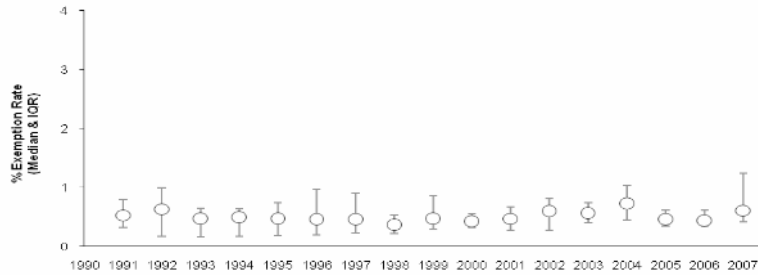
1991 - 2003



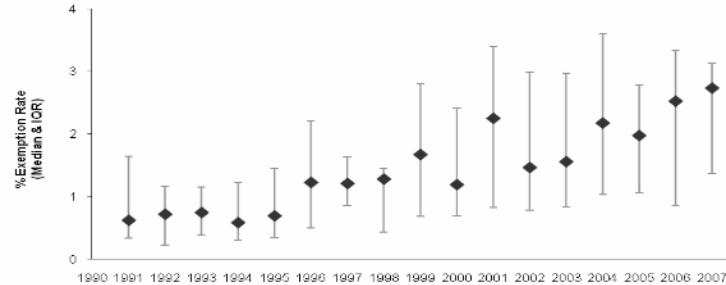
Nonmedical Exemptions for States With Religious Exemptions and With Personal Belief Exemptions

1991 - 2004

Only Religious Exemptions Permitted



Personal Belief Exemptions Permitted

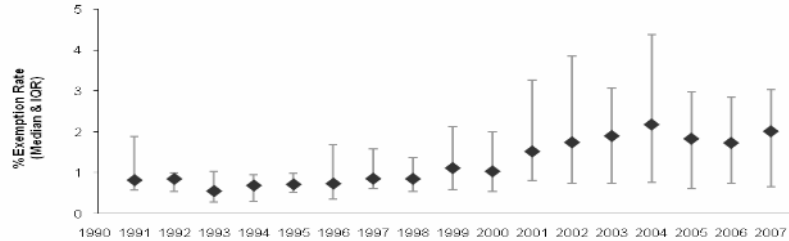


Omer et al., *Journal of American Medical Association*, 2006

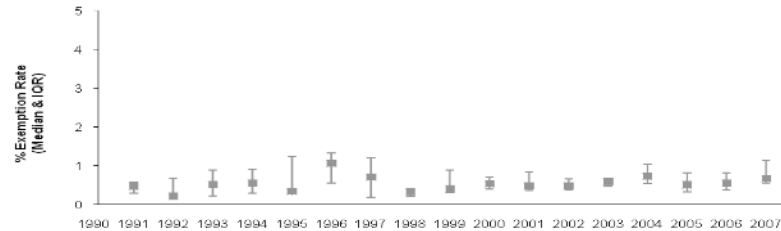
Data updated

Nonmedical Exemptions by Ease of Exemption 1991 - 2007

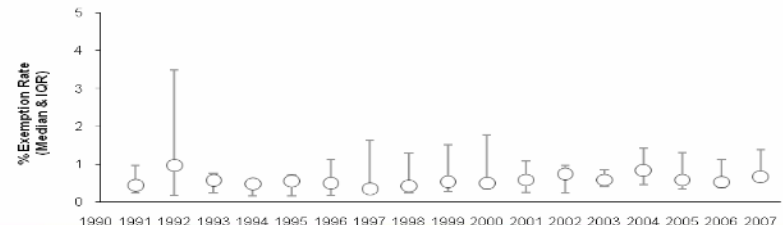
Easy Exemption Policy



Medium Exemption Policy

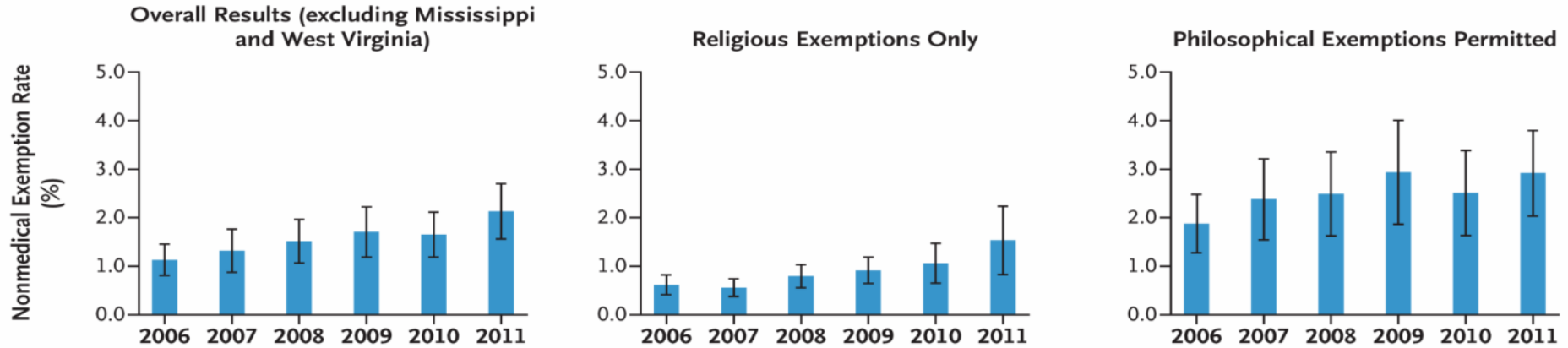


Difficult Exemption Policy



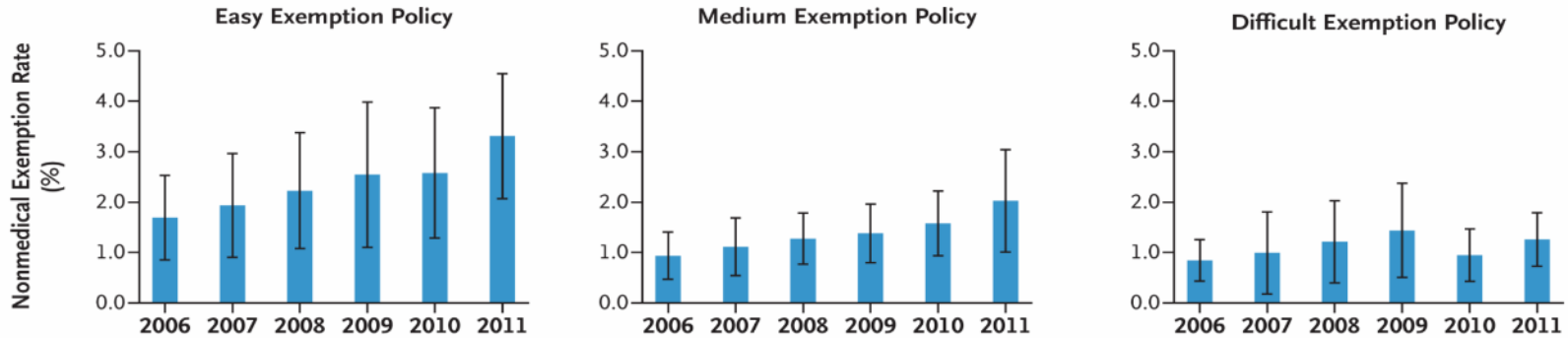
Omer et al., JAMA, 2006
Data updated

Mean (95% CI) Rates of Nonmedical Exemptions by Type of Exemption, 2006–2011



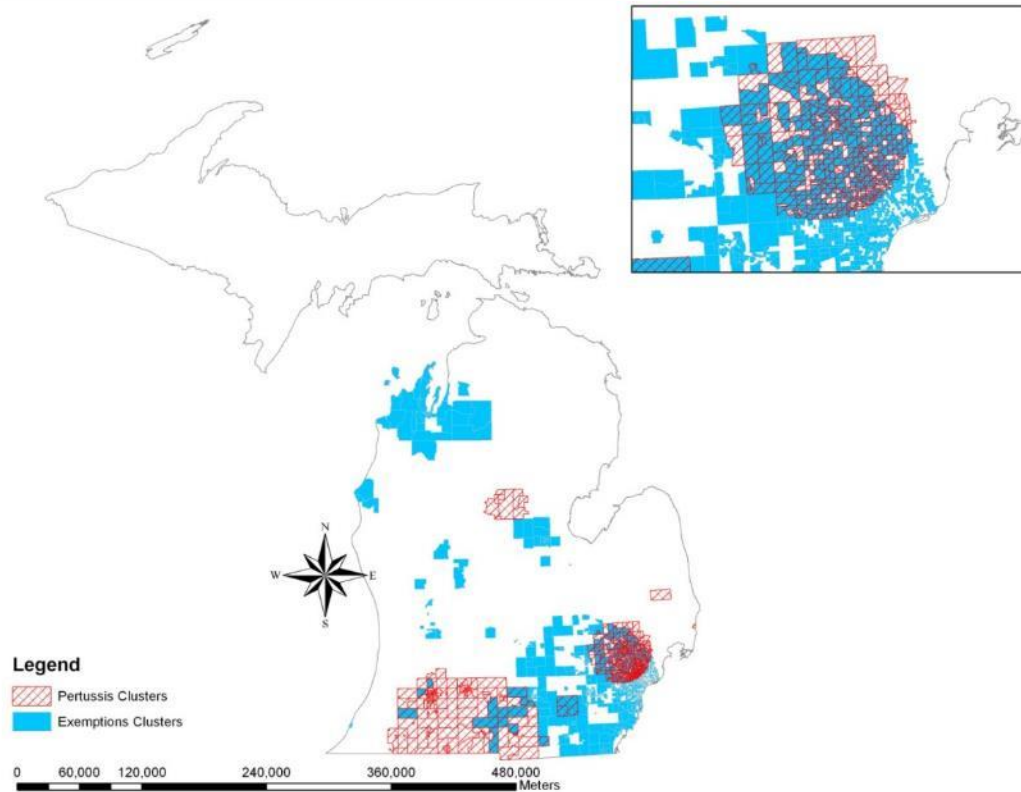
Mean (95% CI) Rates of Nonmedical Exemptions by Ease of Exemption,

2006–2011



Omer et al., New Eng Journal of Medicine, 2012

Relative Locations of Pertussis Space-time Clusters & Exemptions Spatial Clusters



Overlap of Exemptions Clusters with Pertussis Clusters

Unadjusted OR

3.0 (2.5 – 3.6)

Adjusted OR

2.7 (2.2 – 3.3)

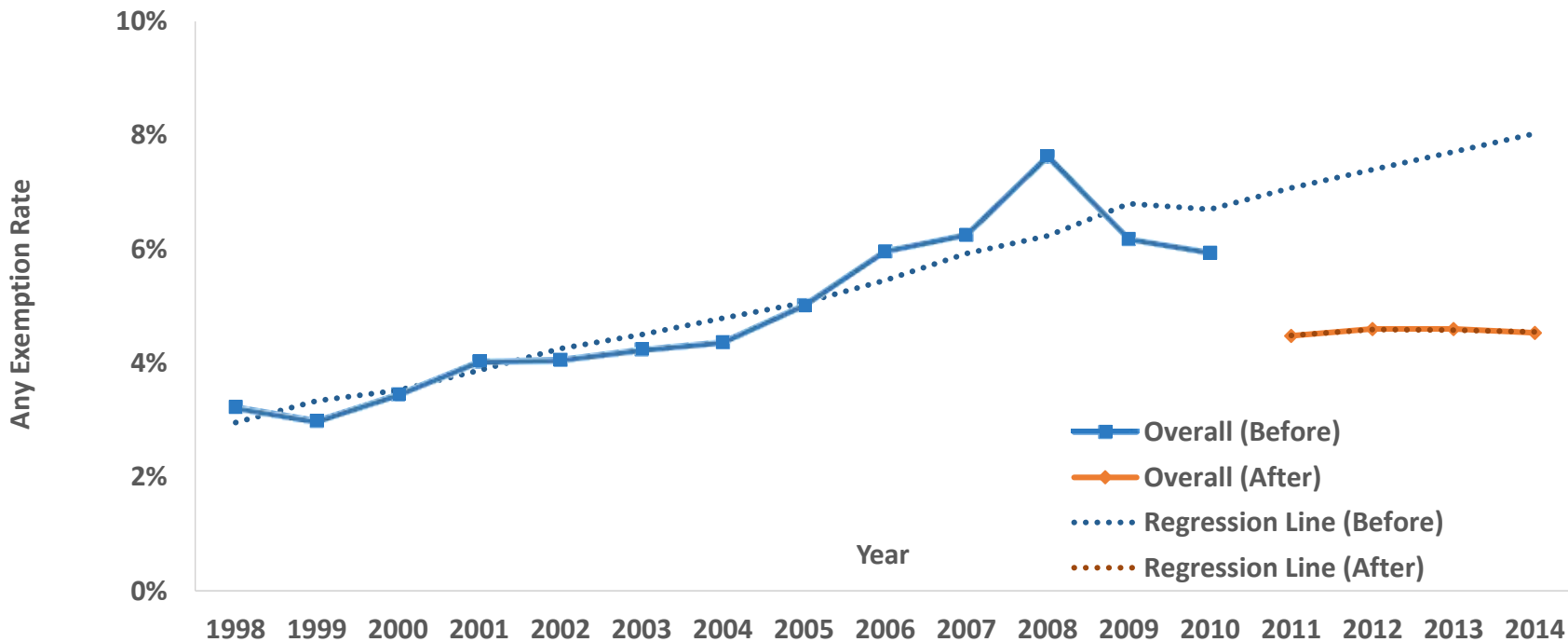
Washington Exemption Law

- SB 5005
- Educational counseling and signed form from a licensed (in WA) health care provider in order to obtain a nonmedical exemption

Law in effect
July 22, 2011

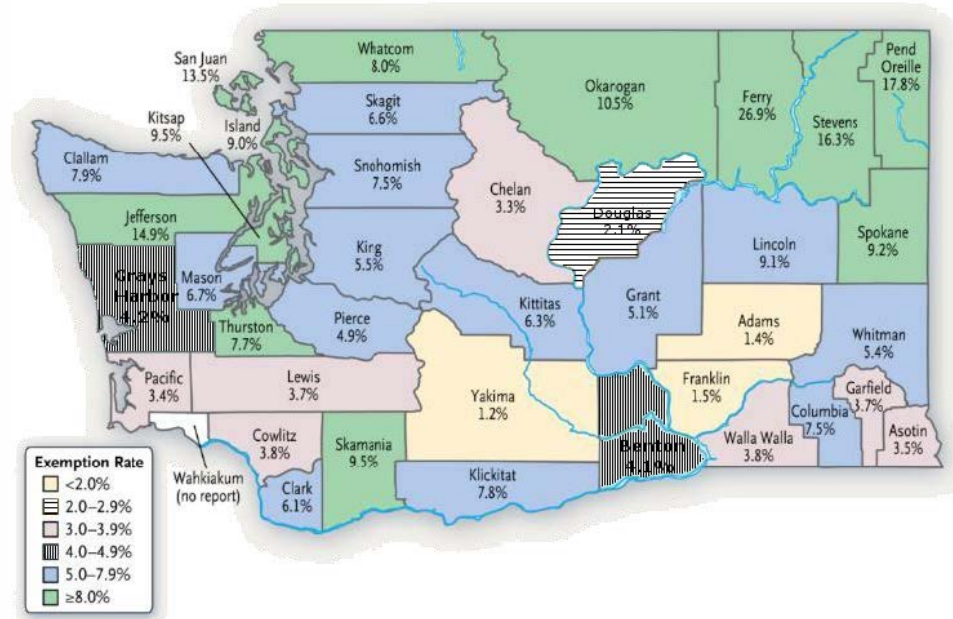
1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
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Impact of Change in Washington Exemption Law



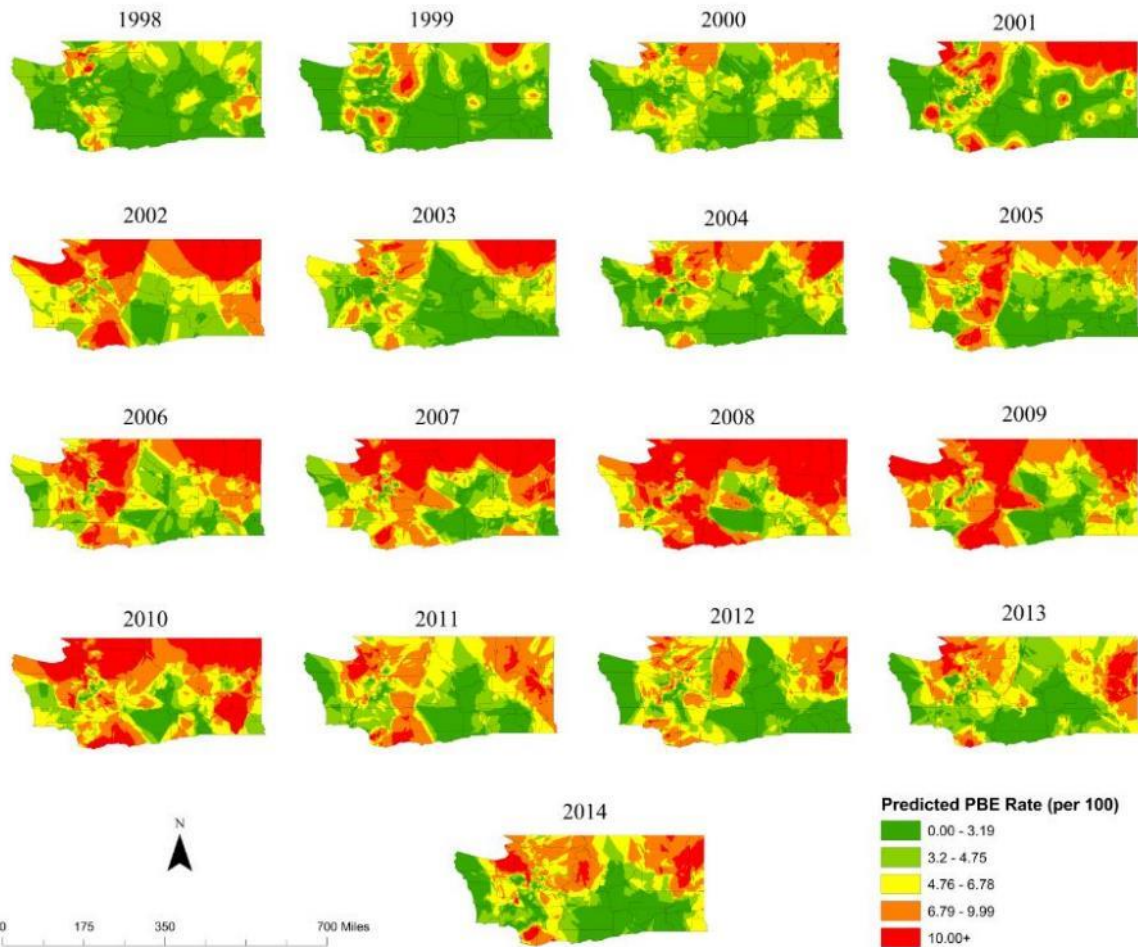
Omer et al., Pediatrics, 2017

WA State Counties' School Entry Exemption Rates - 2006-2007



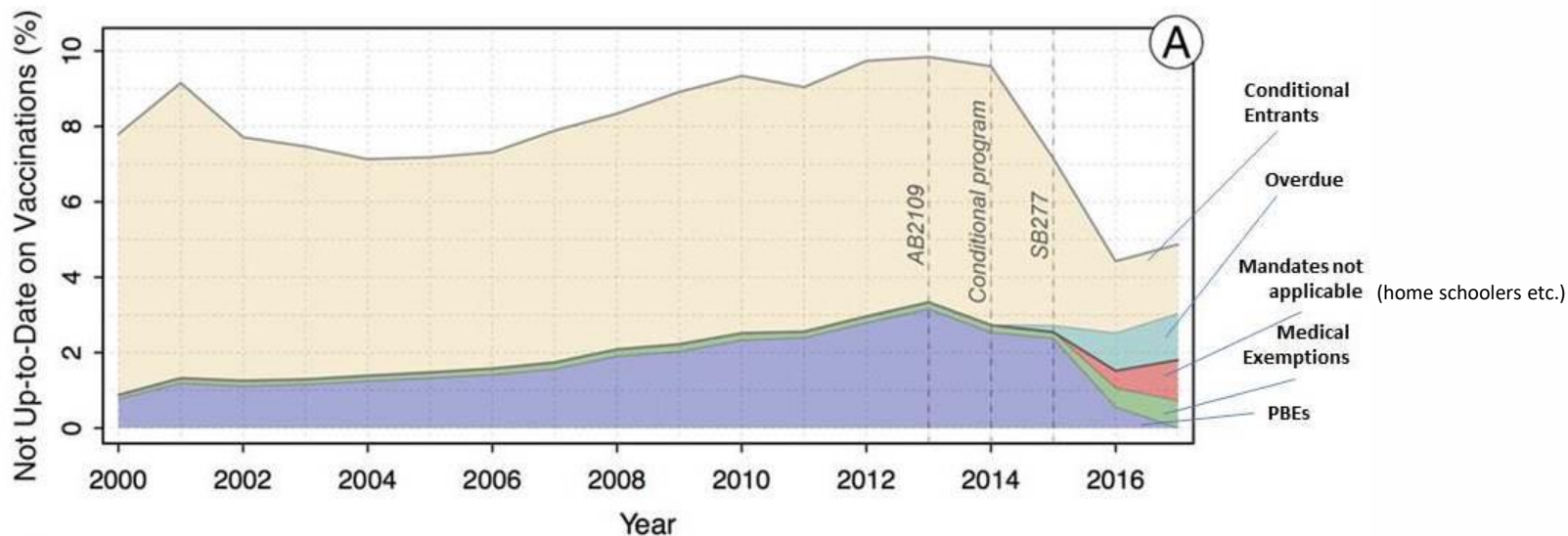
Omer et al., *New Eng Journal of Medicine*, 2009

Predicted PBE Rate (per 100), Washington 1998-2014

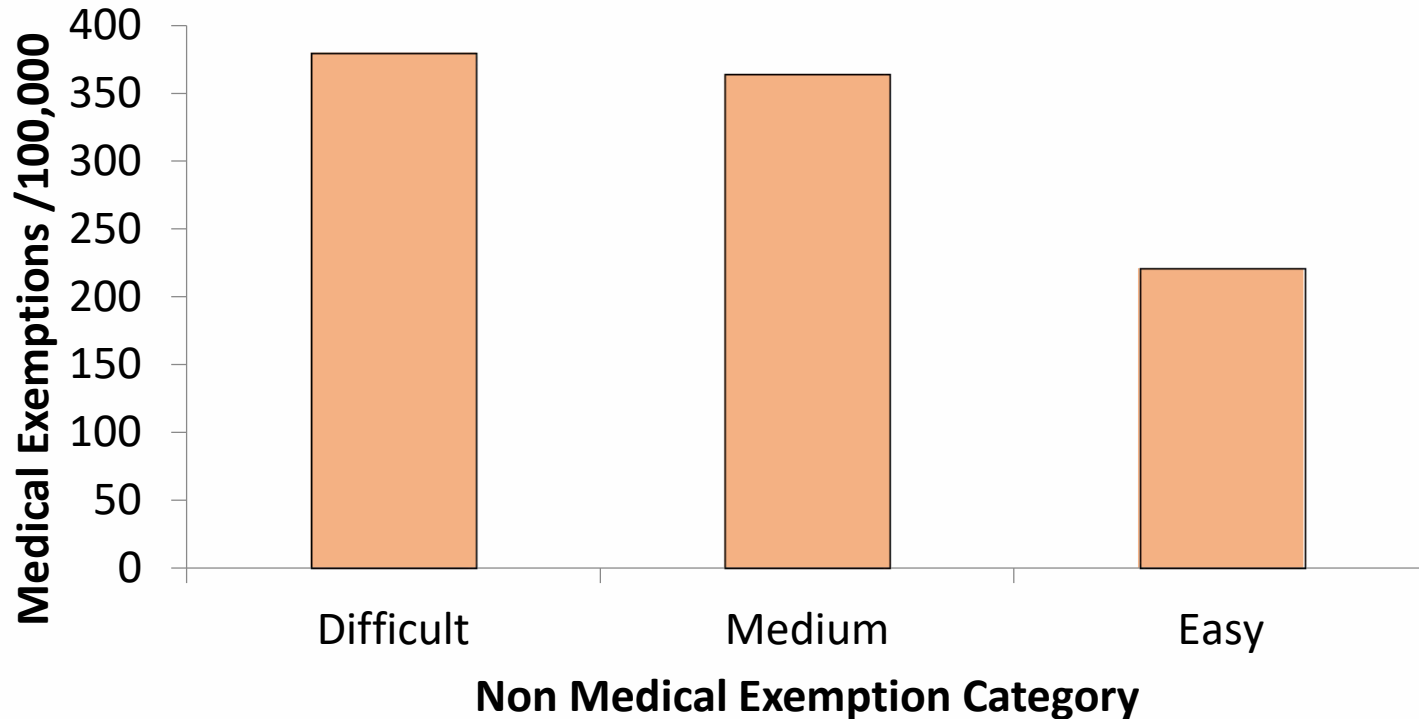


Elimination of Nonmedical Immunization Exemptions in California & School-Entry Vaccine Status

Categories of California kindergarteners entering school not up-to-date on vaccinations.



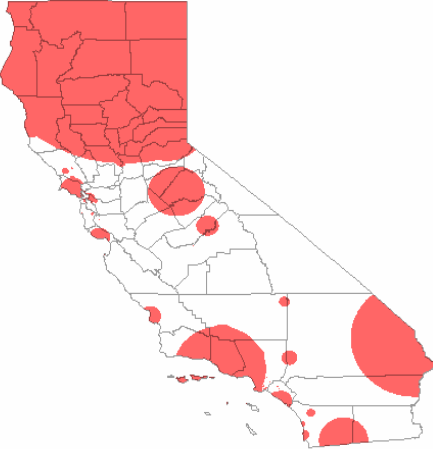
Association of State Non-medical Exemption Policies With Medical Exemption Rates



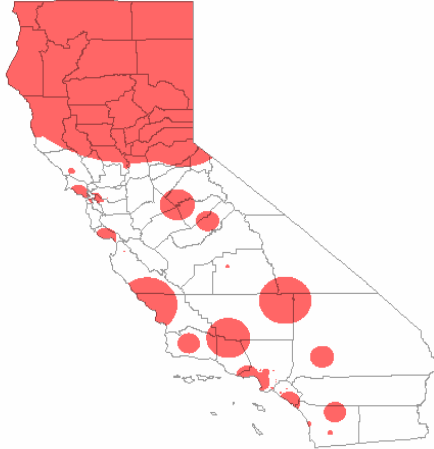
Stadlin, Bednarczyk, Omer JID 2012

Not Up-To-Date Rates

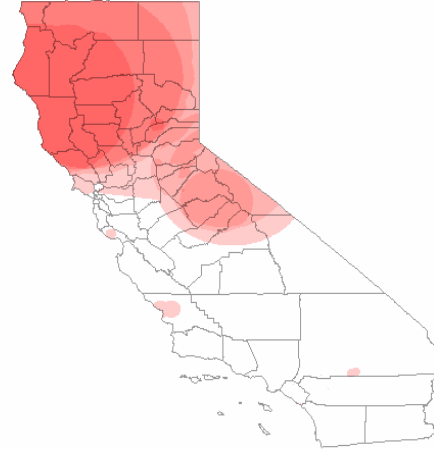
2012-13 era



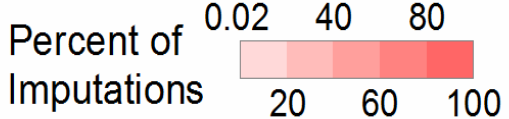
2014-15 era



2016-17 era

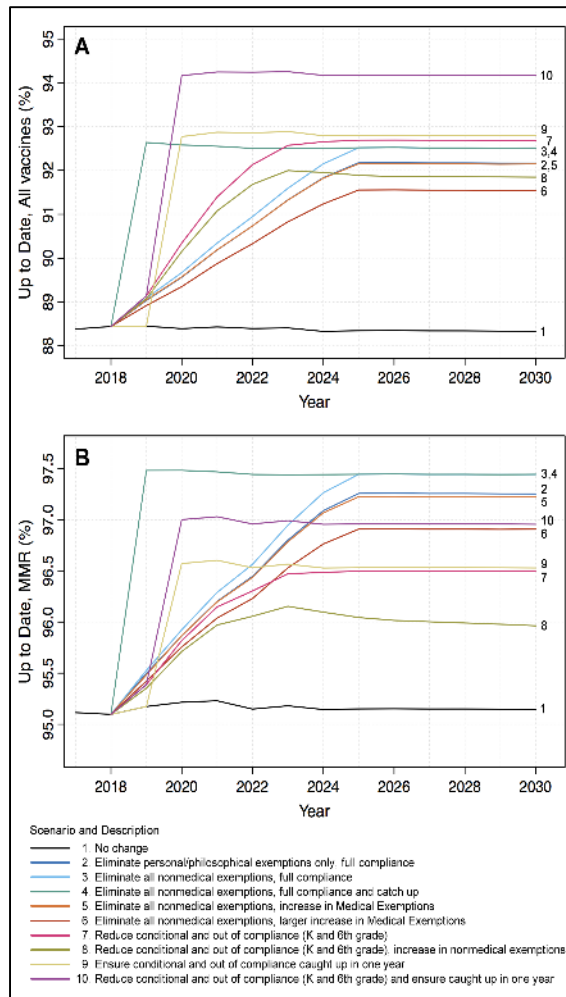


High NUTD Cluster



Clusters of high not-up-to-date rates in California

Effects of potential legislative and administrative actions on vaccine up-to-date rates



The New York Times

How to Handle the Vaccine Skeptics



Sign a form that discusses the risks of non-vaccination



Letter elaborating on the reason their child should be exempt



In-person counseling



Obtain the form by specifically requesting from the state or local health department, vs. downloading it online



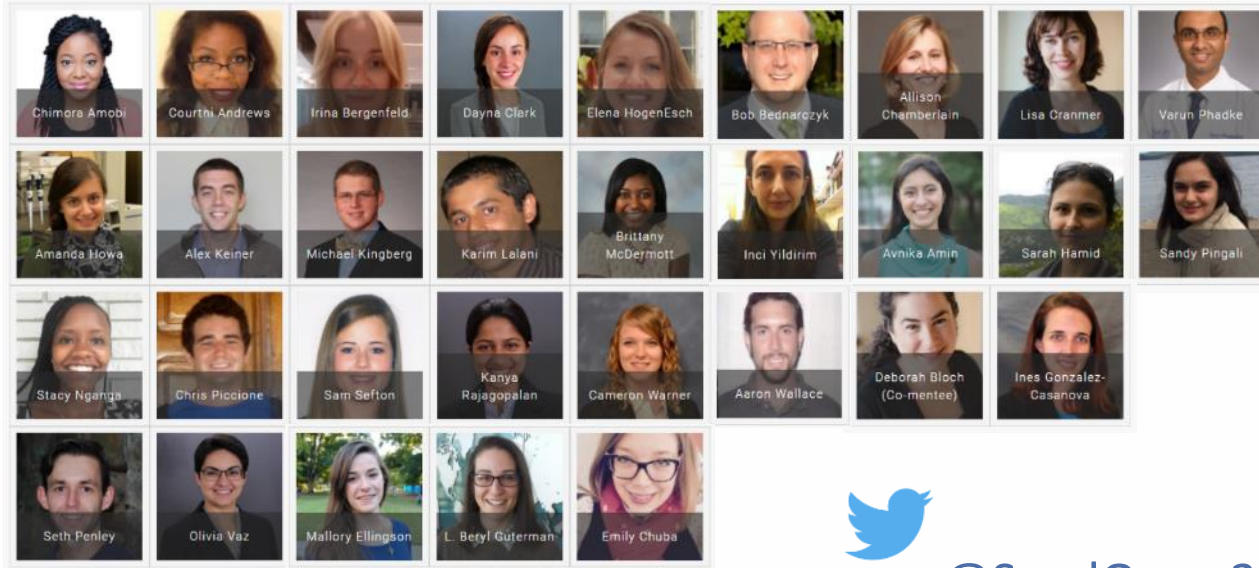
Procedures to review each request for exemption



Annual renewal



Acknowledgments



@SaadOmer3



Vaccines, Autism, and Vaccine Exemptions

Peter Hotez, M.D., Ph.D.

Texas Children's Hospital Endowed
Chair in Tropical Pediatrics

Dean, National School of Tropical Medicine
at Baylor College of Medicine

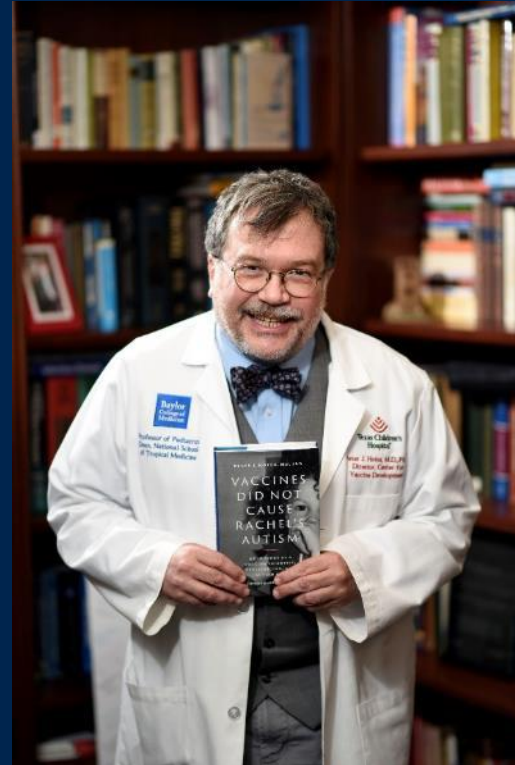
Former US Science Envoy



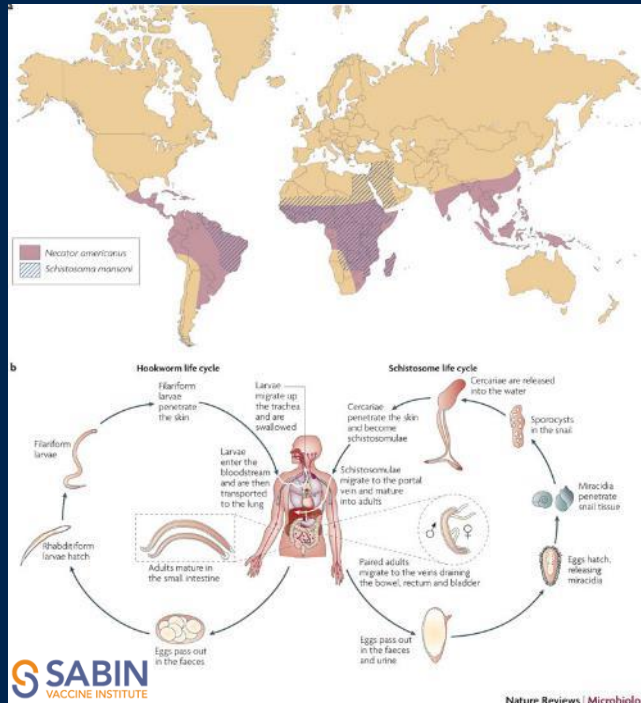
@PeterHotez



Vaccine Scientist, Pediatrician, Autism Dad



Vaccine Targeting Hookworm and Schistosomiasis Co-Infections



A MULTIVALENT
VACCINE TARGETING
HOOKWORM + SCHISTO





U.S. Science Envoy Program



Leishmaniasis: “Aleppo Evil”



Texas Children's Hospital Center for Vaccine Development



Baylor
College of
Medicine

NATIONAL SCHOOL OF
TROPICAL
MEDICINE

TEXAS NON-MEDICAL VACCINE EXEMPTIONS (2003-2019)

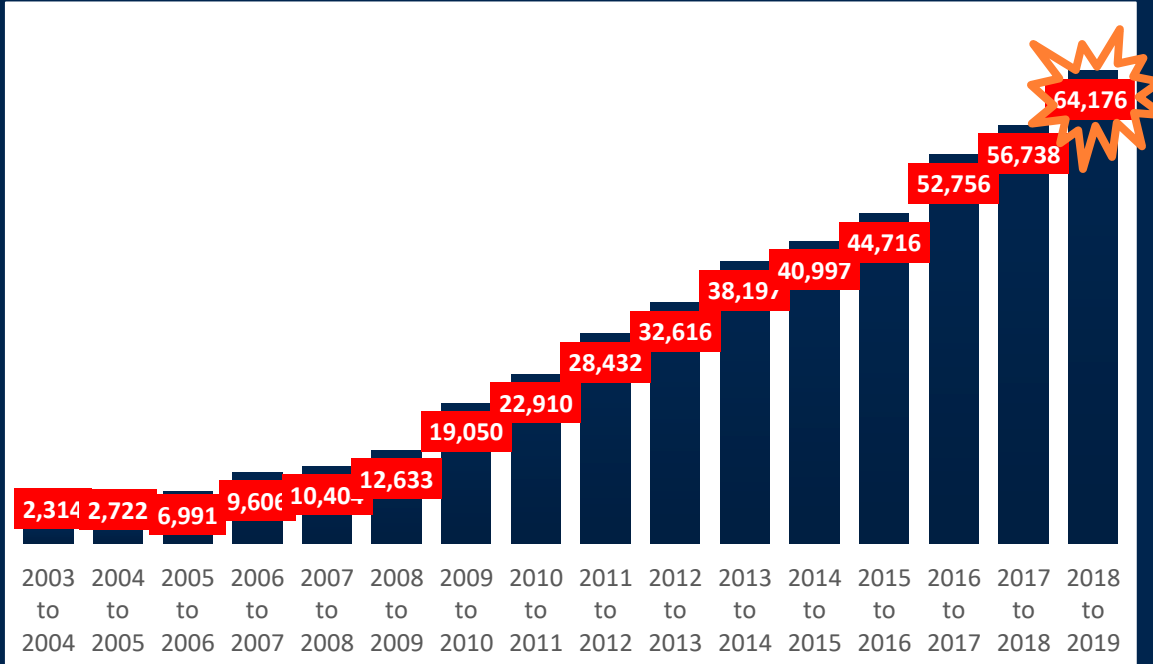
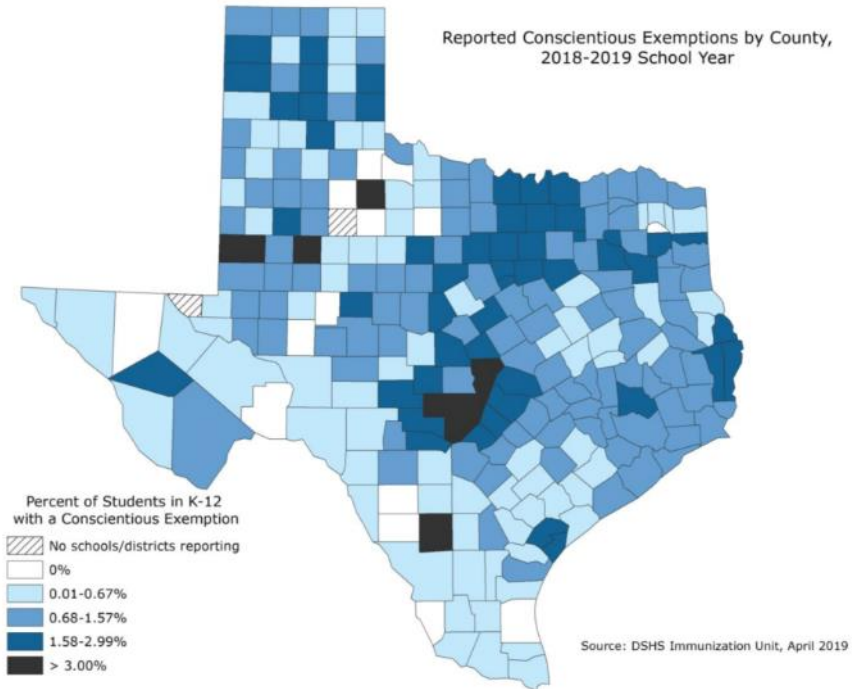


Figure 1. Percent of Students in Kindergarten through 12th Grade with a Conscientious Exemption on file for at least one vaccine





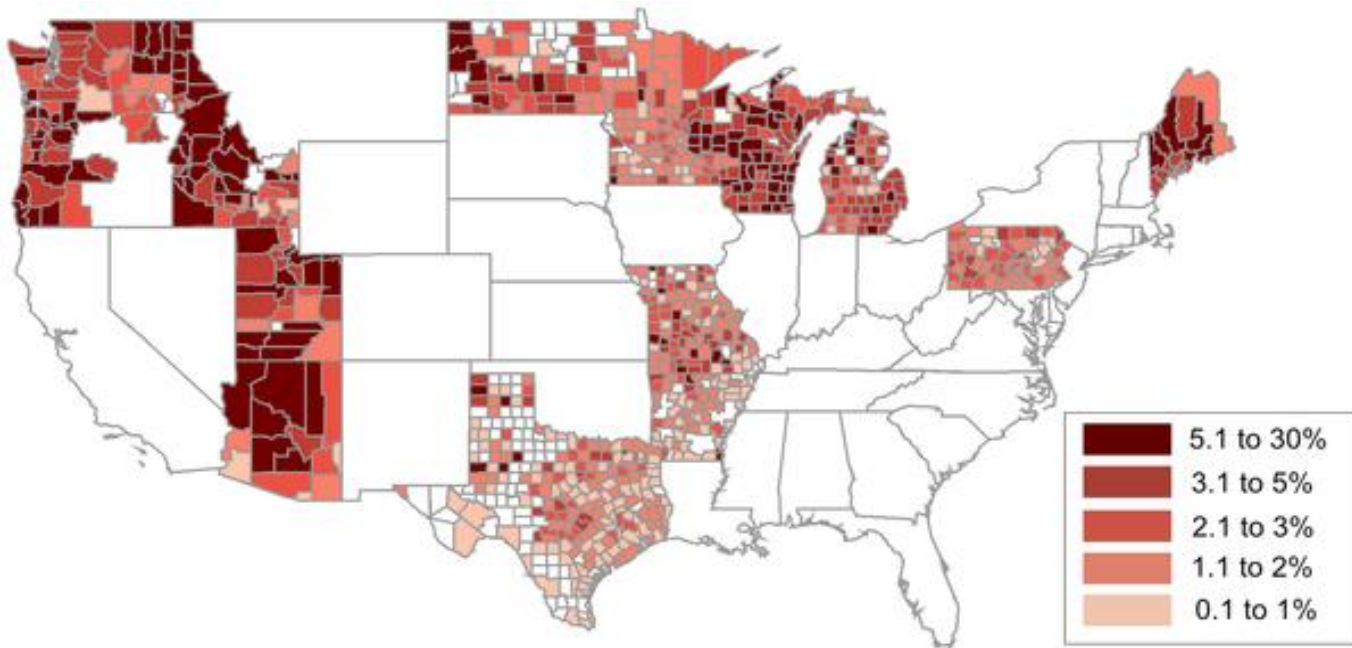
Schools with Highest Rates of Vaccination Exemptions

<u>School</u>	<u>Percent exempted</u>
Austin Waldorf School (Travis)	40.51%
Regents Academy (Nacogdoches)	37.75%
Austin Discovery School (Travis)	30.06%
Joshua Adv Multi-Gr Sch (Johnson)	26.67%
Trinity Christian Academy Paris (Lamar)	23.86%
The Khabele School (Travis)	22.08%
Aesa Prep Academy (Travis)	20.65%

Fig 1. Increasing nationwide trend in kindergarten NME rates from 2009 to 2017.



Heat map of county-level NME rates in 2016 to 2017



Olive JK, Hotez PJ, Damania A, Nolan MS (2018) Correction: The state of the antivaccine movement in the United States: A focused examination of nonmedical exemptions in states and counties. *PLOS Medicine* 15(7): e1002616.

<https://doi.org/10.1371/journal.pmed.1002616>

<http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002616>

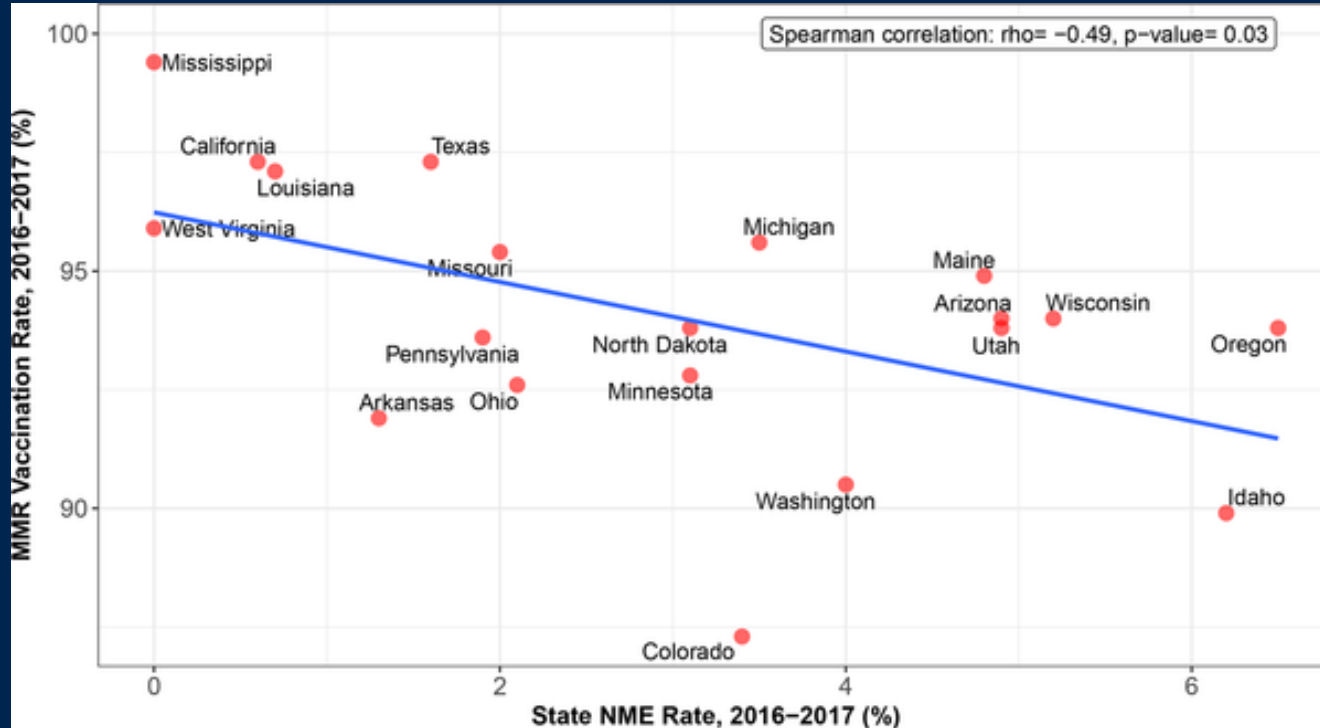
Heat map of counties with >400 kindergarteners with NMEs in 2016 to 2017



Olive JK, Hotez PJ, Damania A, Nolan MS (2018) Correction: The state of the antivaccine movement in the United States: A focused examination of nonmedical exemptions in states and counties. *PLOS Medicine* 15(7): e1002616.

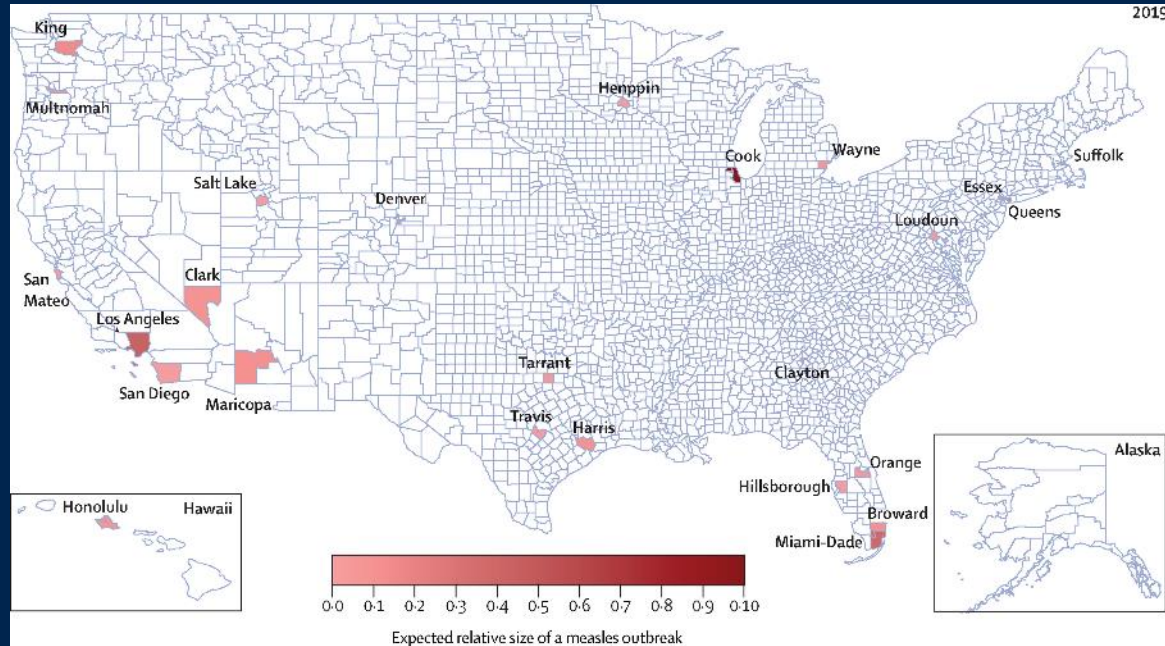
<https://doi.org/10.1371/journal.pmed.1002616> <http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002616>

Fig 4. Negative relationship between state percentage of kindergarten MMR vaccine uptake and NME rate in the 2016 to 2017 school year.



Sarkar et al (2019) Lancet Infect Dis

Measles resurgence in the USA: how international travel compounds vaccine resistance



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Patches of Disorganization in the Neocortex of Children with Autism

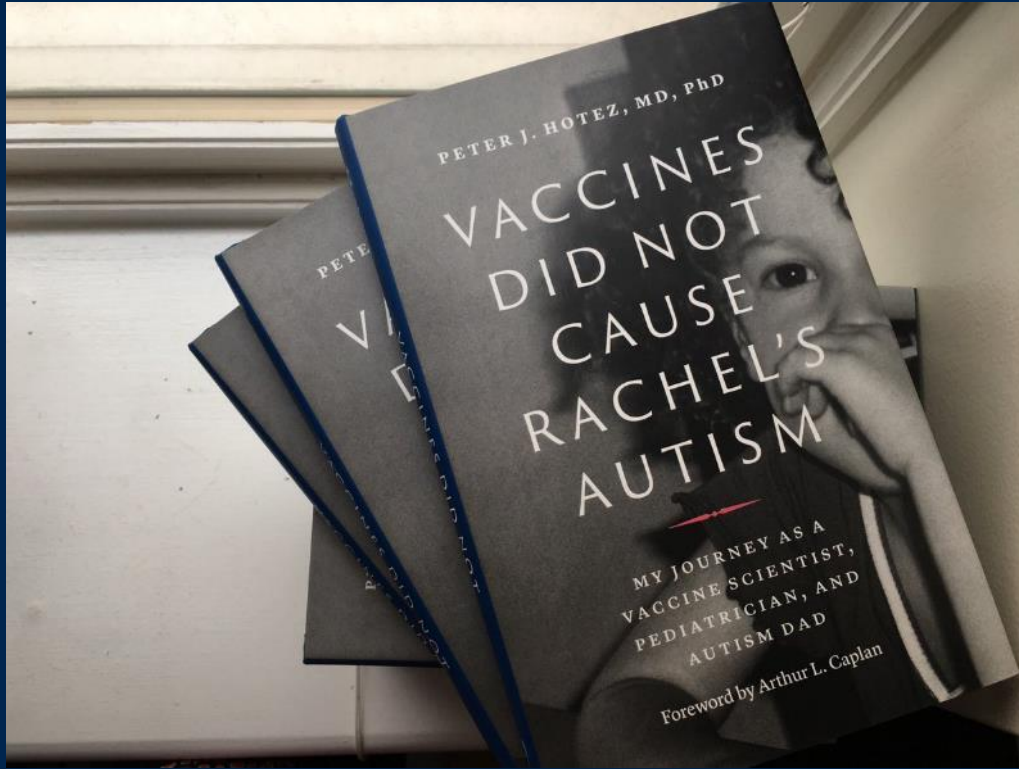
Rich Stoner, Ph.D., Maggie L. Chow, Ph.D., Maureen P. Boyle, Ph.D.,
Susan M. Sunkin, Ph.D., Peter R. Mouton, Ph.D., Subhojit Roy, M.D., Ph.D.,
Anthony Wynshaw-Boris, M.D., Ph.D., Sophia A. Colamarino, Ph.D.,
Ed S. Lein, Ph.D., and Eric Courchesne, Ph.D.

ABSTRACT

BACKGROUND

Autism involves early brain overgrowth and dysfunction, which is most strongly evident in the prefrontal cortex. As assessed on pathological analysis, an excess of neurons in the prefrontal cortex among children with autism signals a disturbance in prenatal development and may be concomitant with abnormal cell type and





MISSISSIPPI IMMUNIZATION REQUIREMENTS

BECKY SHIPP, RN, BSN

MISSISSIPPI STATE DEPARTMENT OF HEALTH
IMMUNIZATION PROGRAM DIRECTOR



- **Mississippi Legislation**
 - Immunization Compliance
- **Immunization Requirements**
 - School
 - Licensed Child Care Facilities
- **Regulation**
 - Immunization Compliance
 - Medical Exemptions
- **Vaccination Coverage Rates**
 - School Entry
 - 19-35 Months
 - 13-17 Years
- **Successful Partnerships**

OVERVIEW



Mississippi Code

41-23-37

State Health Officer

- Specifies immunization practices to control vaccine preventable diseases (VPDs)

Schools Defined - All Enrolled Children

- Public, Private, or Kindergarten
- Similar Type of Facility (intended for instruction of children)
- Exception – legitimate home instruction program (defined by law)

Certificate of Vaccination

- Issued on forms specified by the MS State Board of Health

Exemption - Medical Reasons

- Application by duly licensed physician on behalf of a child

Schools Report to the MSDH

- Immunization compliance status of enrolled children, October & December each year



Mississippi Code
41-23-37

Mississippi Immunization Requirements

School Entry (K₄ – 12th)

Diphtheria, Tetanus, Pertussis (DTaP)

Inactivated Polio (IPV)

Hepatitis B (Hep B)

Measles, Mumps, Rubella (MMR)

Varicella (VAR)

Tdap (7th Grade Entry)

Mississippi Immunization Requirements

Licensed Child Care Facilities

Diphtheria, Tetanus, Pertussis (DTaP)
Inactivated Polio (IPV)
Hepatitis B (Hep B)
Measles, Mumps, Rubella (MMR)
Varicella (VAR)
Haemophilus influenzae type b (Hib)
Pneumococcal (PCV)

MISSISSIPPI CERTIFICATE OF IMMUNIZATION COMPLIANCE FORM 121

Required for Attendance
Schools (K4-12th grade)
& Licensed Child Care Facilities
(Physical Copies On-site)

Form No. 121 Certificate of Immunization Compliance

Name of Child/
Student/Employee _____ Birthdate _____

Name of Parent _____

Address _____
Street City State Zip

Vaccine	Date Each Dose Was Given				
	1st	2nd	3rd	4th	5th
Pneumococcal					
Varicella					
DTaP/DT/Td					
Hib					
Polio					
MMR					
Hep B					
Tdap					
Other					

Check here if prior history of chicken pox

Medical Exemption Form 122 attached

The individual named above has met the immunization requirements for attendance or employment in a Mississippi child care facility or entry into a Mississippi public or private school, college, or university.

Please check (✓) one box only

Complete Until School Entry

Complete for school entry (K4-6th grade)

Complete for middle school, high school, university/college,
work requirements (7th grade and above)

Temporarily compliant-next immunization is due _____
Month Day Year

Record in transit, valid until _____
Month Day Year

Date of serological confirmation of immunity

*Varicella _____ / _____ / _____
Month Day Year

*Measles _____ / _____ / _____
Month Day Year

*Rubella _____ / _____ / _____
Month Day Year

*Mumps _____ / _____ / _____
Month Day Year

**Serological testing for the above are the only acceptable tiers
that will be allowed for child care and school entry
for those who are not fully immunized.*

Print or Stamp Name of Facility _____

Signature and Title of Issuing Individual _____

Month Day Year

Hib and Pneumococcal vaccines are only required for child care.

Mississippi Certificate of Immunization Compliance – Form 121

**MS Immunization Registry
Form 121 - Prepopulated Fields
Accessible to medical
professionals**

Compliance Form Instruction 2009

Form No. 121 Certificate of Immunization Compliance

Name of Child/
Student/Employee _____ Birthdate _____

Name of Parent _____

Address _____
Street City State Zip

Vaccine	Date Each Dose Was Given				
	1st	2nd	3rd	4th	5th
Pneumococcal					
Varicella					
DTaP/DT/Td					
Hib					
Polio					
MMR					
Hep B					
Tdap					
Other					

Mississippi Certificate of Immunization Compliance – Form 121

MS Immunization Registry

Validation of Compliance

- Requires signature of medical professional
- MD, DO, PA, NP, RPh, RN, LPN

Check here if prior history of chicken pox

Medical Exemption Form 122 attached

The individual named above has met the immunization requirements for attendance or employment in a Mississippi child care facility or entry into a Mississippi public or private school, college, or university.

Please check (✓) one box only

Date of serological confirmation of immunity

Complete Until School Entry

*Varicella _____ / _____ / _____
Month Day Year

Complete for school entry (K4-6th grade)

*Measles _____ / _____ / _____
Month Day Year

Complete for middle school, high school, university/college, work requirements (7th grade and above)

*Rubella _____ / _____ / _____
Month Day Year

Temporarily compliant-next immunization is due _____ / _____ / _____
Month Day Year

*Mumps _____ / _____ / _____
Month Day Year

Record in transit, valid until _____ / _____ / _____
Month Day Year

**Serological testing for the above are the only acceptable titers that will be allowed for child care and school entry for those who are not fully immunized.*

Print or Stamp Name of Facility

Signature and Title of Issuing Individual

_____/_____/_____
Month Day Year

Hib and Pneumococcal vaccines are only required for child care.

MISSISSIPPI MEDICAL EXEMPTION REQUEST FORM 139

Medical Exemption Request

Instructions

- The child's pediatrician, family physician, or internist licensed in Mississippi must complete and submit this form to the State Epidemiologist or Deputy State Epidemiologist. Forms completed by a child's out-of-state tertiary care physician will be reviewed on a case by case basis.
- The State Epidemiologist or Deputy State Epidemiologist will complete the Medical Exemption Form 122 and return a copy via mail to the physician and the parent at the addresses indicated below.

Date of Request: _____

Name of Child: _____ Date of Birth: _____
Last First MI

Name of Parent: _____
Last First MI

Address: _____
Street City State Zip

Indicate the exemption status for each vaccine in the table below (an exemption status is required for each vaccine):

Vaccine	Indicate Permanent, Temporary or No Exemption	Expiration Date if Temporary
DTaP		
Hepatitis B		
*Hib		
IPV		
MMR		
*Pneumococcal		
**Tdap		
Varicella		

*For child care only

**For 7th grade entry only

Indicate reason for medical exemption (use additional sheets if needed): _____

Print name of child's pediatrician, family physician, or internist licensed in Mississippi (or out-of-state tertiary care physician): _____

Address: _____
Street City State Zip

Telephone Number: _____ Fax Number: _____

I declare that:

- The physical condition of this child to be such that the vaccination(s) specified on this form would endanger their life or health and outweighs the risks of death or disability from the vaccine preventable disease.
- I have discussed the benefits and risks of immunizations with the parent/guardian as a condition for exemption.
- I have informed the parent/guardian that if any vaccine-preventable diseases for which the child has not been adequately immunized are occurring in or threatening to occur in the community, the child will, for the safety and benefit of him/herself and other children, be excluded from day-care/school until the infectious disease is no longer present or is no longer a threat to the safety and welfare of the child or other children in the day-care/school.

Signature of child's pediatrician/family physician/internist licensed in Mississippi: _____
(Or out-of-state tertiary care physician)

Mississippi Medical License Number: _____ NPI#: _____
(Or out-of-state tertiary care physician license number)

This document should be submitted to the State Epidemiologist or Deputy State Epidemiologist at the MSDH in Jackson, Mississippi.
 Mail to: MSDH Epidemiology Office, Post Office Box 1700, Jackson, Mississippi, 39215, or fax to (601) 576-7497.

Mississippi Medical Exemption Request – Form 139

- **Submissions Accepted From**
 - Child’s pediatrician, family physician, or internist licensed in MS.
 - Child’s out-of-state tertiary care physician (reviewed on a case-by-case basis).
- **Exemption Status – Each Vaccine**
 - Permanent
 - Temporary (requires expiration date)
 - No Exemption

Medical Exemption Request

Instructions

- The child’s pediatrician, family physician, or internist licensed in Mississippi must complete and submit this form to the State Epidemiologist or Deputy State Epidemiologist. Forms completed by a child’s out-of-state tertiary care physician will be reviewed on a case by case basis.
- The State Epidemiologist or Deputy State Epidemiologist will complete the Medical Exemption Form 122 and return a copy via mail to the physician and the parent at the addresses indicated below.

Date of Request: _____

Name of Child: _____ Date of Birth: _____
Last *First* *MI*

Name of Parent: _____
Last *First* *MI*

Address: _____
Street *City* *State* *Zip*

Indicate the exemption status for each vaccine in the table below (an exemption status is required for each vaccine):

Vaccine	Indicate Permanent, Temporary or No Exemption	Expiration Date if Temporary
DTaP		
Hepatitis B		
*Hib		
IPV		
MMR		
*Pneumococcal		
**Tdap		
Varicella		

*For child care only **For 7th grade entry only

Mississippi Medical Exemption Request – Form 139

- **Documentation Required of Requesting Physician**
 - Reason for Medical Exemption
 - Physician Contact Information
 - Declarative Statement
 - To validate physician’s decision for vaccine exemption request
 - To ensure appropriate education has been provided to the parent/guardian
 - Includes MS Medical License Number & NPI #
- **Submissions to MSDH Central Office**
 - Reviewed by State Epidemiologist or Deputy State Epidemiologist for:
 - Completion of Documentation Requirements
 - Not Validated

Indicate reason for medical exemption (use additional sheets if needed): _____

Print name of child’s pediatrician, family physician, or internist licensed in Mississippi (or out-of-state tertiary care physician): _____

Address: _____
Street City State Zip

Telephone Number: _____ Fax Number: _____

I declare that:

- The physical condition of this child to be such that the vaccination(s) specified on this form would endanger their life or health and outweighs the risks of death or disability from the vaccine preventable disease.
- I have discussed the benefits and risks of immunizations with the parent/guardian as a condition for exemption.
- I have informed the parent/guardian that if any vaccine-preventable diseases for which the child has not been adequately immunized are occurring in or threatening to occur in the community, the child will, for the safety and benefit of him/herself and other children, be excluded from daycare/school until the infectious disease is no longer present or is no longer a threat to the safety and welfare of the child or other children in the daycare/school.

Signature of child’s pediatrician/family physician/internist licensed in Mississippi: _____
(Or out-of-state tertiary care physician)

Mississippi Medical License Number: _____ NPI#: _____
(Or out-of-state tertiary care physician license number)

This document should be submitted to the State Epidemiologist or Deputy State Epidemiologist at the MSDH in Jackson, Mississippi.
Mail to: MSDH Epidemiology Office, Post Office Box 1700, Jackson, Mississippi, 39215, or fax to (601) 576-7497.

Mississippi State Department of Health

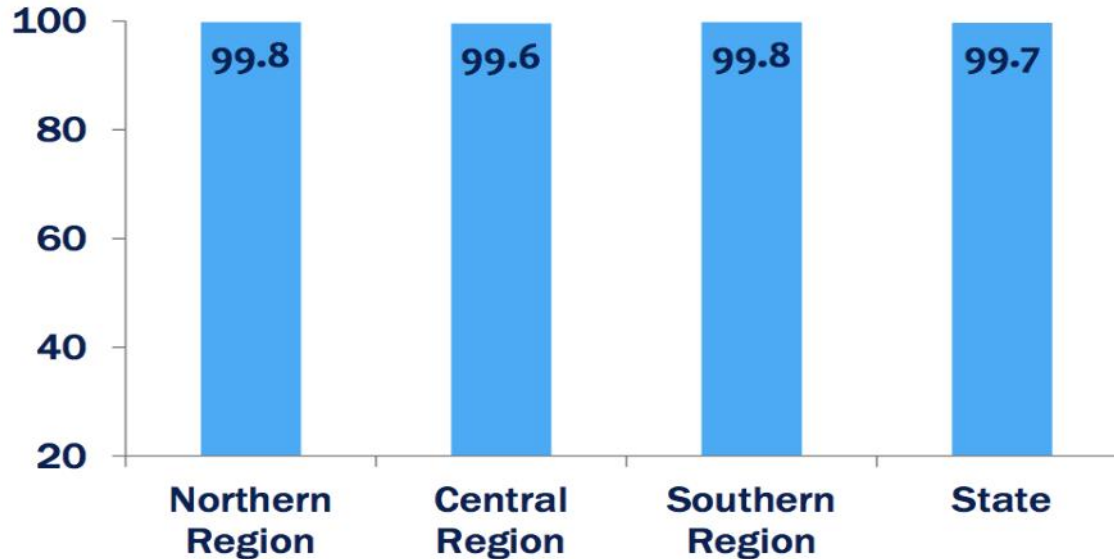
Revised 7/07/16

Form 139 IMM

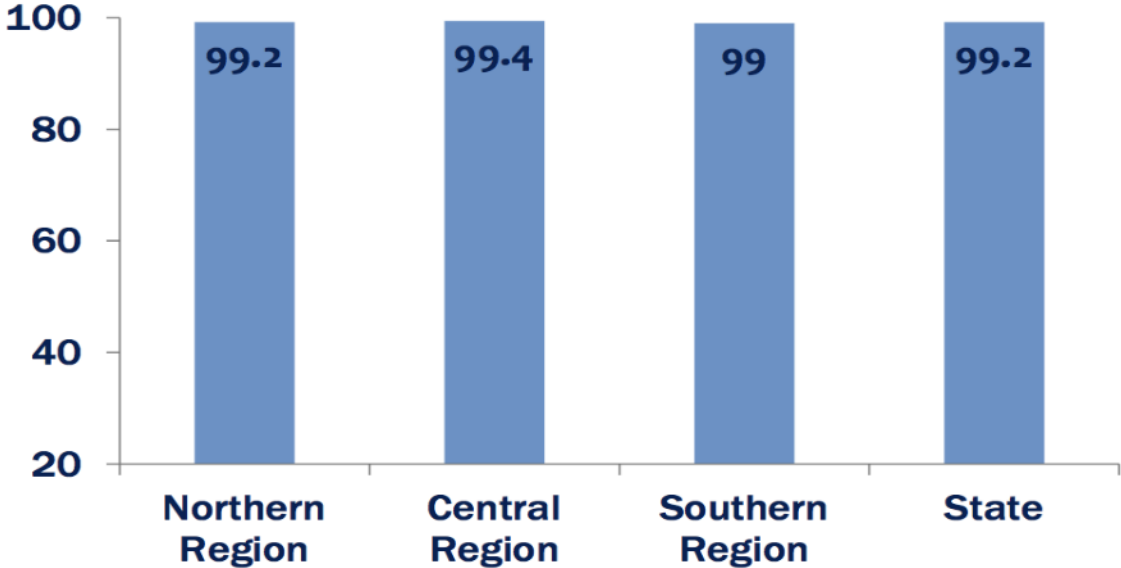
**MISSISSIPPI
CERTIFICATE OF
MEDICAL
EXEMPTION
FORM 122**

- **Completed & Signed By**
 - State Epidemiologist or Deputy State Epidemiologist
- **Copies Sent To**
 - Requesting Physician
 - Parent
- **Accepted By**
 - Schools
 - Licensed Child Care Facilities
- **Originals Filed at MSDH**
 - During threat of VPD occurring in the community, child will be excluded from school/facility per MSDH guidance

Percentage of Mississippi Students Kindergarten-12th Grade Complete Certificate of Immunization Compliance (Form 121) by Region

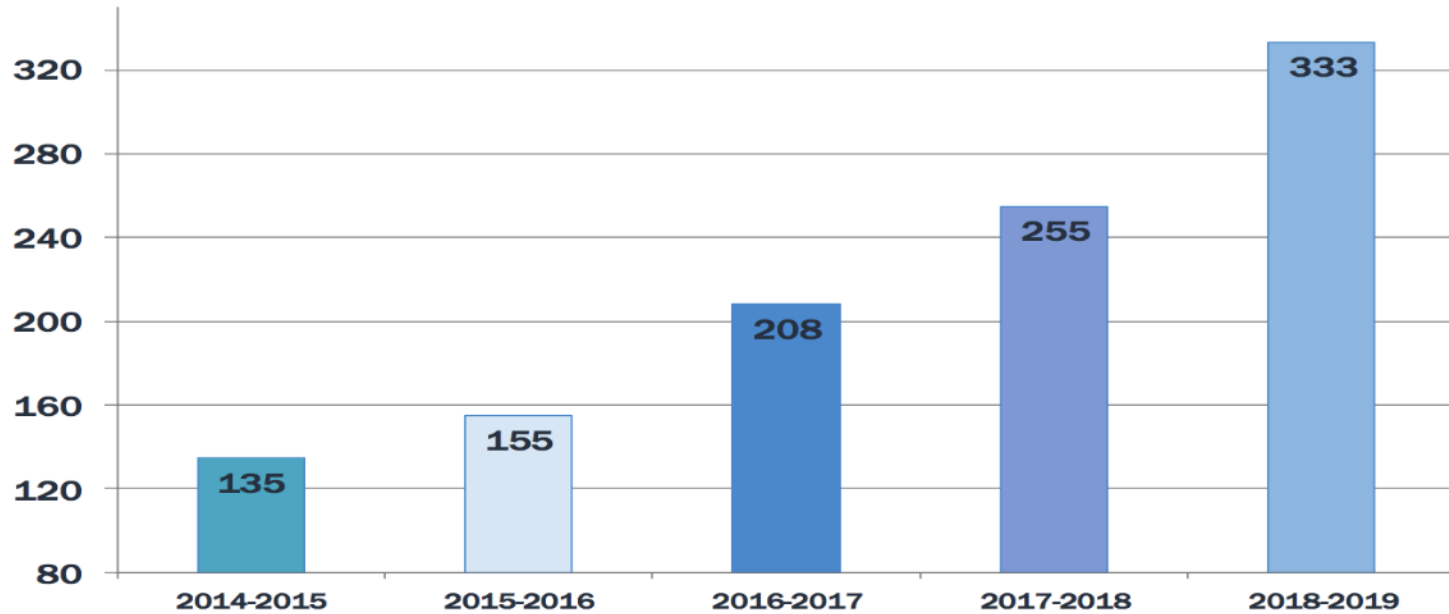


Percentage of Mississippi Kindergarten Students Complete Certificate of Immunization Compliance (Form 121) by Region



Source: Mississippi State Department of Health Final School Compliance Report, 2018-2019 school year (Revised 04/11/2019)

Mississippi 2018-2019 School Medical Exemptions By Year, Children Enrolled in Kindergarten-12th Grade



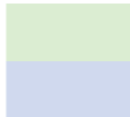
Source: Mississippi State Department of Health Final School Compliance Report, 2018-2019 school year (Revised 04/11/2019)

Mississippi NIS-Child Vaccination Coverage Rates 2010 - 2017

19-35 Months	2010	2011	2012	2013	2014	2015	2016	2017
DTaP ≥ 4 doses	85.4	80.8	83.6	87.4	83.3	79.6	80.3	82.9
IPV ≥ 3 doses	95.7	91.9	94.6	94.9	95.4	92	91	94.1
Hep B ≥ 3 doses	95.8	90.5	93.2	92.8	95.2	92.9	90.3	93.7
Hib ≥ 3 doses	90.1	94.1	94	96.6	93.4	85.1	88.2	91.8
PCV ≥ 4 doses	84.3	83	87.2	83.4	82.8	78	81.8	83.8
MMR ≥ 1 dose	93.8	89.6	93.4	95.2	95	89.8	90.8	91.8
Varicella ≥ 1 dose	92.3	90.6	93.7	92.9	92	89.2	90.2	92.4
RV UTD	56.9	69.3	63.8	63.2	69.8	65.9	72.3	75.6
Hep A ≥ 2 doses	40.7	42.6	39.7	39.1	38.3	41.2	48.3	49.8

Required

Recommended



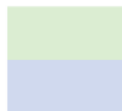
Source: Centers for Disease Control & Prevention Child Vax View at <https://www.cdc.gov/vaccines/imz-managers/coverage/childvaxview/data-reports/index.html>

Mississippi NIS-Teen Vaccination Coverage Rates 2010 - 2017

13-17 Years	2010	2011	2012	2013	2014	2015	2016	2017
Tdap ≥ 1 dose	29	36.9	53.5	60.2	70.8	74.7	82	92.4
MMR ≥ 2 doses	87.8	94.8	95.6	92.3	93.4	92.3	94.7	96.2
Varicella ≥ 2 doses *	66.8	61.2	67.8	68.5	69.1	78.4	79.9	91.1
Hep B ≥ 3 doses	83.2	95.3	93.5	95.9	91.7	92.1	93.5	94.6
MenACWY ≥ 1 dose	26	34.2	40.7	50.1	46	55.3	57.4	63
HPV 1 Dose - Female	34	31.9	39.7	53.1	45.8	52.4	47.8	56
HPV 1 Dose - Male	-	-	20.9	13.6	26.5	38.9	43.6	43.6
HPV 3 Doses or UTD - Female	20	19.6	12.1	25.2	24.6	24.4	33.9	34.4
HPV 3 Doses or UTD - Male	-	-	-	-	-	21.4	24.5	23.4

Required

Recommended



**Includes history of Varicella disease*

Source: Centers for Disease Control & Prevention Teen Vax View at <https://www.cdc.gov/vaccines/imz-managers/coverage/teenvaxview/data-reports/index.html>

SUCCESSFUL PARTNERSHIPS


IMMUNIZATION REQUIREMENTS

Protecting
Mississippians from
Vaccine Preventable Diseases

- Vaccine Access & Compliance Validation
 - Statewide Medical Professionals
- Compliance Assurance
 - MS Department of Education
 - MSDH Licensure Division
- Advocacy
 - MS Chapter AAP
 - MS Public Health Association

THANK YOU

Becky Shipp, RN, BSN 

(601) 576-7751 

Rebecca.Shipp@msdh.ms.gov 

www.healthyms.com 

Richard Pan, MD, MPH, FAAP
California State Senator
Author of AB2109, SB277 & SB276



sd06.senate.ca.gov



: RichardPanMD



: @DrPanMD

#VaccinesWork #SB277 #CommunityImmunity #FakeMEsHurtKids #SB276



Vaccinate  CALIFORNIA



NATIONAL COALITION OF
100 BLACK WOMEN
INCORPORATED



CALIFORNIA ASSOCIATION
FOR NURSE PRACTITIONERS



California Medical Association



CALIFORNIA ACEP
AMERICAN COLLEGE OF EMERGENCY PHYSICIANS



CALIFORNIA
IMMUNIZATION
COALITION



CoBlackHealthNetwork.org



CHILDREN'S
SPECIALTY
CARE
COALITION
Putting California's Children First



California State
PTA
everychild. onevoice.



CALIFORNIA COVERAGE
& HEALTH INITIATIVES



CHILDREN'S
SPECIALTY
CARE
COALITION
Putting California's Children First

Children's Defense Fund-California

A strong, effective, independent voice for all children

Children's Defense Fund-California CHILDREN NOW

A strong, effective, independent voice for all children



AIDS HEALTHCARE
FOUNDATION



AFL-CIO

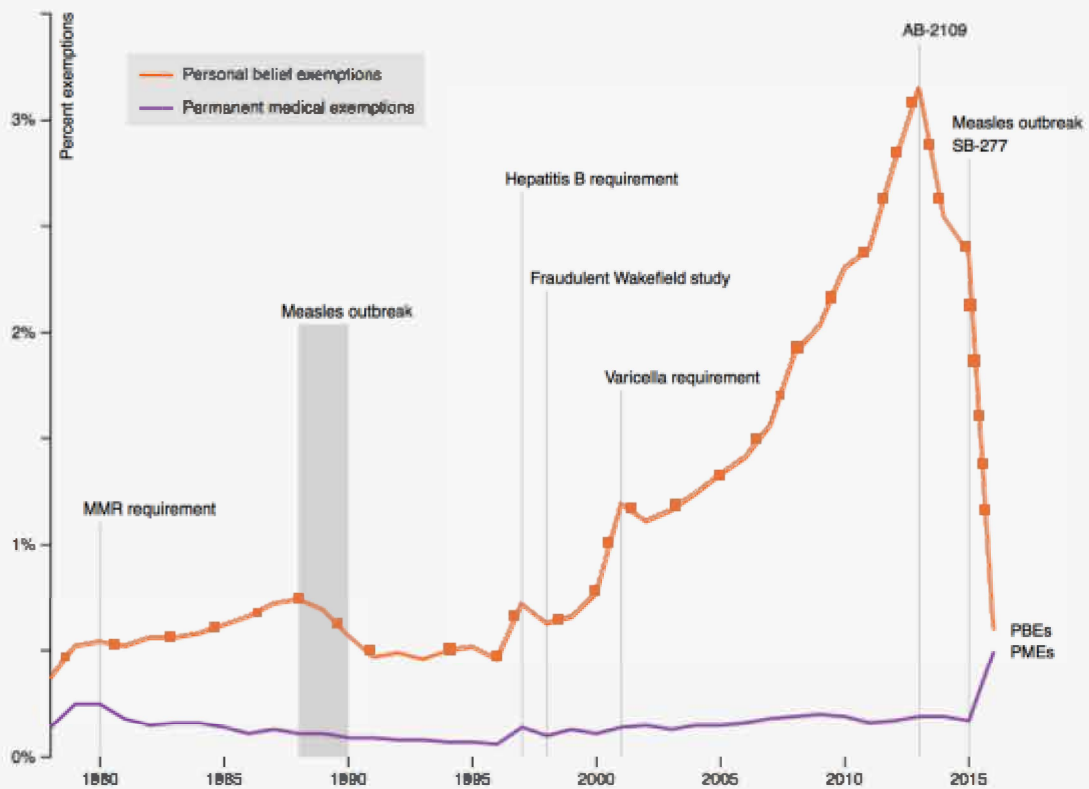


CALIFORNIA ACADEMY OF
FAMILY PHYSICIANS
STRONG MEDICINE FOR CALIFORNIA









Efforts to Enhance Vaccine Coverage: Colorado 2019

National Vaccine Advisory Committee

June 4-5, 2019

John M. Douglas, Jr., MD

Executive Director

Tri-County Health Department

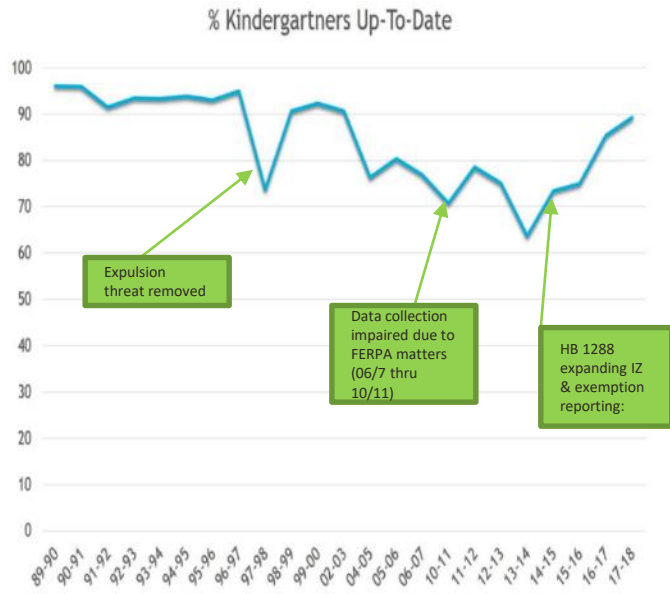
Adams, Arapahoe, & Douglas Counties, Colorado



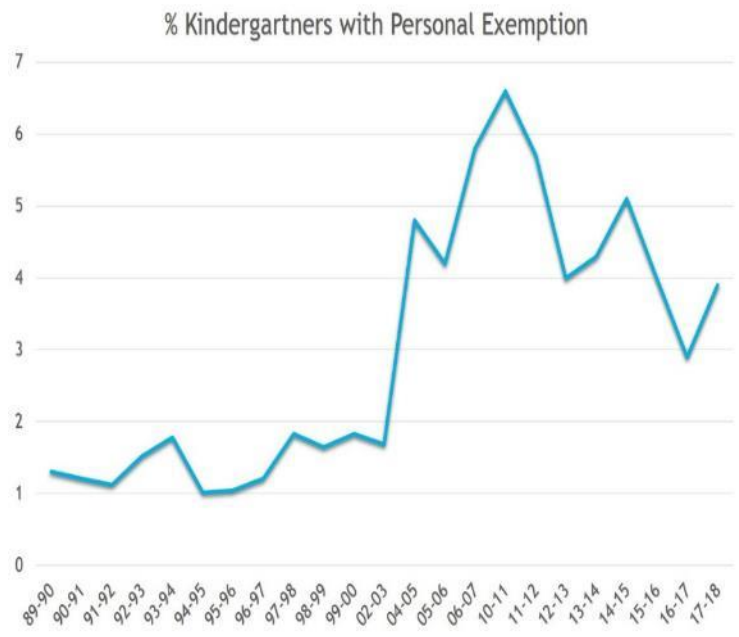
Historical Perspective

- 1978: First school-required immunization laws in CO
 - Included medical, personal, religious exemptions
- 2007: CO Immunization Information System
- 2014: HB 14-1288 requiring
 - All schools and licensed childcare facilities to report annual immunization and exemption rates
 - Exemptions required to be filed every year for schools

Colorado Immunization Trends: Kindergartener Up-to-Date Rate for All Vaccines and Personal Exemptions



- Data Caveats:**
1. Variable publicity, legislative efforts over time
 2. Changing vaccines, ACIP recs, compliance definitions, survey methods
 3. Wide CIs all years



Data Source: Colorado Department of Public Health and Environment, Immunization Branch

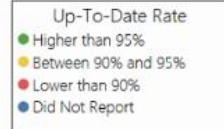
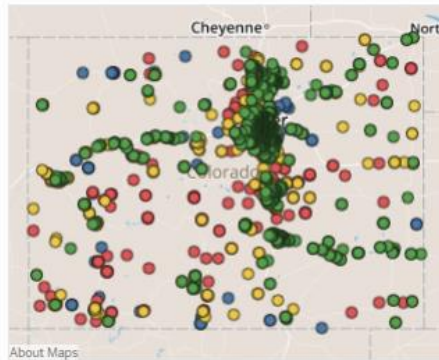
Colorado Up-to-Date and Exemption Rates for Schools Statewide: 2017-18

School Data

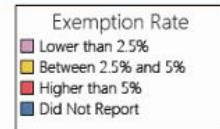
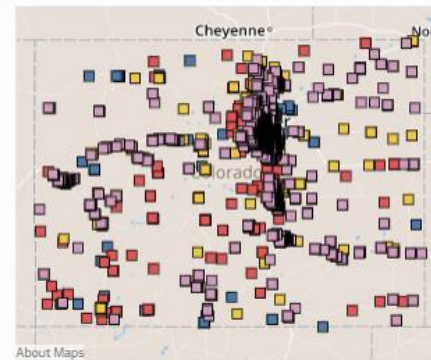
The up-to-date map below shows the school's average rate for all individual vaccines. The exemption map below shows the combined averages for medical, religious and personal exemptions for individual vaccines.

Use the maps to view the schools in your neighborhood; detailed information about each school is available in the charts below the maps.

Average Up-To-Date Rates



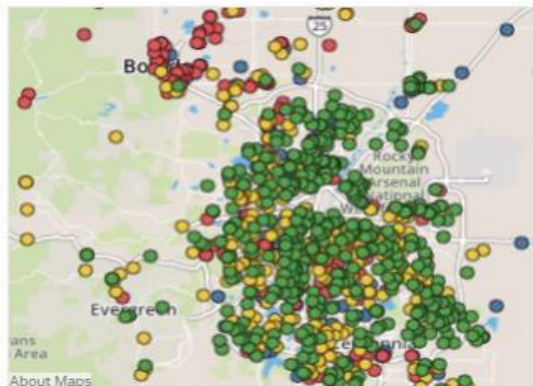
Average Exemption Rates



Colorado Up-to-Date Rates for Schools, Denver Metro and Tri-County Area, 2017-18

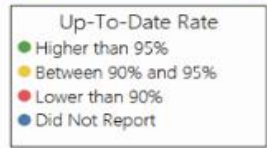
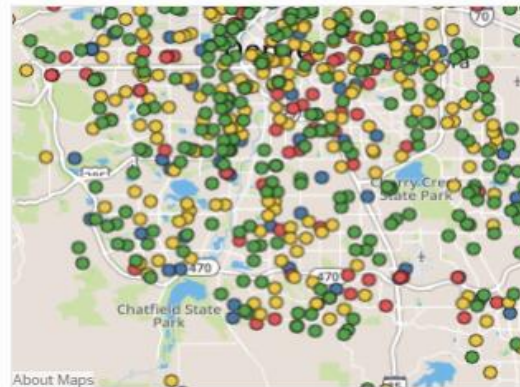
Denver Metro

Average Up-To-Date Rates



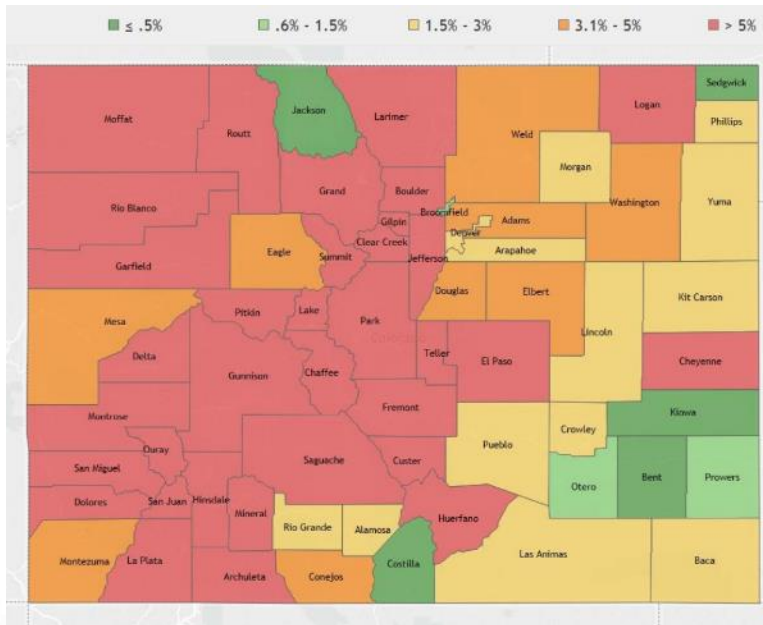
Tri-County Area

Average Up-To-Date Rates

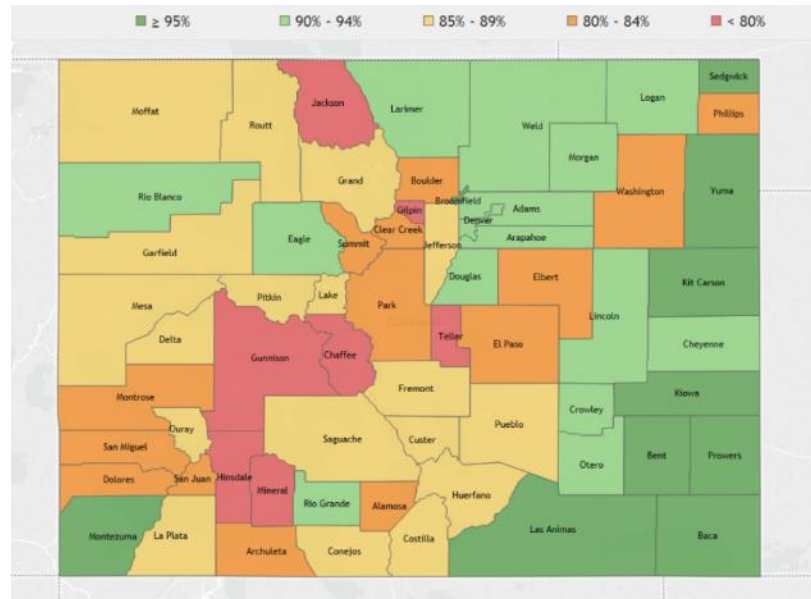


MMR Coverage and Exemptions by Colorado County, 2017-18 School Year

MMR Exemptions

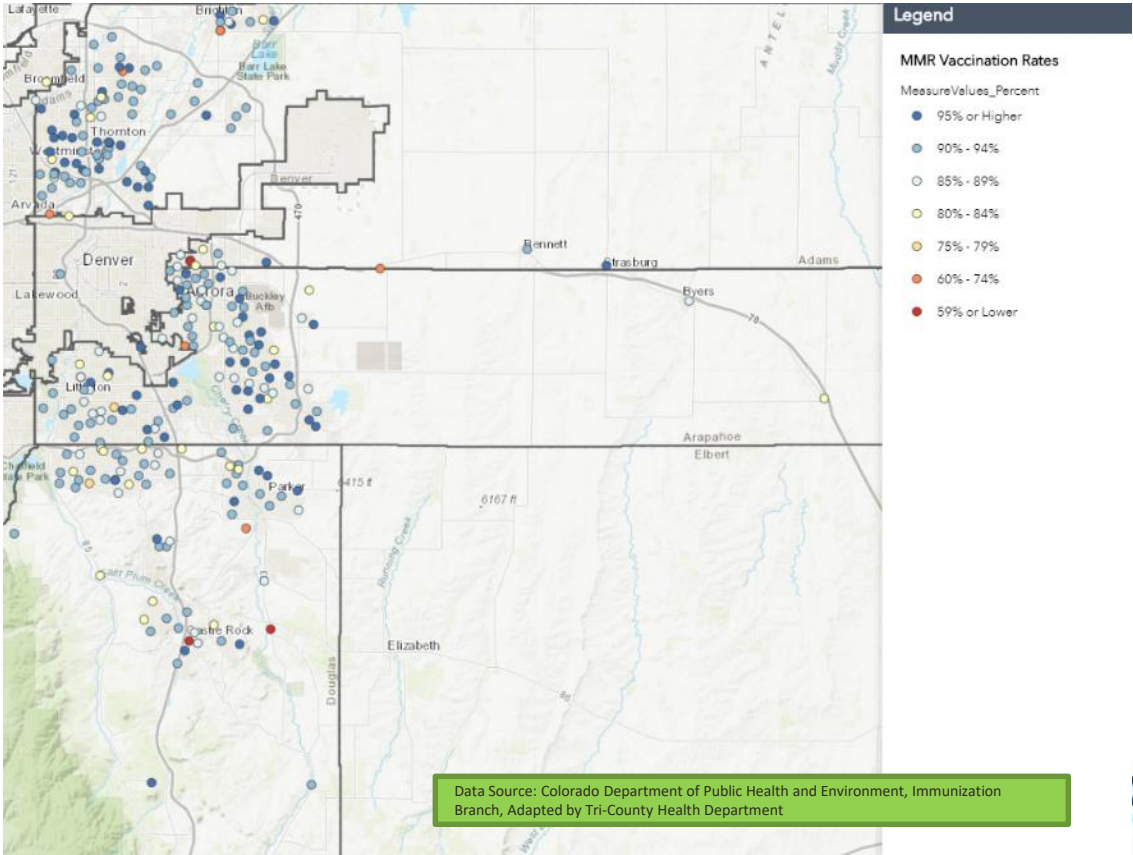


MMR Coverage



Data Source: Colorado Department of Public Health and Environment, Immunization Branch

MMR Vaccination Rates in Tri-County Jurisdiction 2017-18



Colorado School District Immunization Fact Sheets (CCIC)

IMMUNIZATION in Colorado Schools (Statewide), 2017-2018



Overview

Vaccines are a safe and effective way to prevent the spread of serious disease and keep children healthy as they grow. Each year in the US, vaccines save approximately 33,000 lives, prevent 14 million cases of disease, and save \$9.9 billion in direct healthcare costs.

All students and school staff members deserve a healthy school environment that supports their wellbeing and builds a strong foundation for learning. It takes an entire community to protect against serious disease. Because diseases such as measles can spread rapidly, adequate vaccination coverage at the school level – roughly 95% for each vaccine – helps to protect the health of students, staff and others in the community, including those who cannot be vaccinated for medical reasons or because they are still too young to receive vaccines. This is known as herd immunity or community protection.

Did You Know?



49th Colorado ranks last among the 49 states that reported for kindergarten vaccination rates.



9,424 Colorado kids were hospitalized or went to an emergency room with vaccine-preventable diseases in 2017.



95% of vaccine exemptions in Colorado are claimed for non-medical reasons.



23,228 K-12 students entered Colorado schools in 2017-18 without protection from one or more vaccines.

Why It Matters

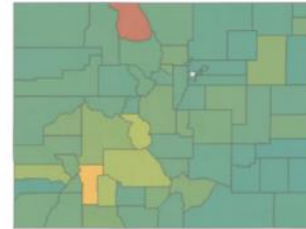
- Data show there is variation in vaccination coverage across the state. Areas of low vaccination put children – especially young children – and communities at risk for outbreaks, which can spread rapidly in school settings.
- State and local vaccination requirements for school entry are important tools for maintaining high vaccination coverage rates and, in turn, lower rates of dangerous and costly diseases.
- Research shows that states with lenient exemption policies, like Colorado, have higher exemption rates, which can lead to increased risk for vaccine-preventable disease outbreaks.
- Low vaccination rates can be an indicator that families may need help understanding which vaccines their children should have and/or where they can conveniently access free or low-cost vaccines.
- Ensuring high vaccination rates will reduce absenteeism linked to preventable disease in support of the Every Student Succeeds Act (ESSA).
- Research shows that schools with higher vaccination rates are more likely to have a school nurse supporting immunization efforts.

Vaccination Reporting Policy

Per Colorado law and Board of Health Rule, all licensed schools and child care centers are required to report their immunization and exemption rate information annually to the Colorado Department of Public Health and Environment (CDPHE) to be made publicly available online.

To access the school immunization data, visit www.colorado.gov/pacific/cdphe/school-and-child-care-immunization-data.

County Level Rates of K-12 Children Fully Immunized with MMR (measles-mumps-rubella), 2017-18



58.8% 98.9%

This information can be viewed for each vaccine on the CDPHE school immunization data site.

Percentage of All Colorado Schools That Meet Healthy People 2020 Goals for Vaccination Coverage, 2017-18

Vaccine/Disease	All K-12 Schools
MMR (Measles, Mumps, Rubella)	55%
Varicella (Chickenpox)	40%
DTaP (Diphtheria, Tetanus, Pertussis)	50%
HepB (Hepatitis B)	58%
Polio	53%
Tdap (Tetanus, Diphtheria, Pertussis)	28%

National Healthy People 2020 (HP 2020) goals are to reach 95% coverage for each vaccine.

Colorado School District Immunization Fact Sheets (CCIC)

IMMUNIZATION in Adams 12 Five Star Schools School District, 2017-2018

How Is My District Doing?*

- The percent of students in Adams 12 Five Star Schools fully immunized for each vaccine is **97%**.
- Exemption rates for any vaccine range from **0%-17.1%** across individual schools, demonstrating variability among schools within the district.
- 753** students in Adams 12 Five Star Schools are exempt from one or more school-required vaccines.
- 204** students in Adams 12 Five Star Schools have incomplete or missing records for one or more vaccines.

What Does This Mean for Our Schools?

Vaccination is important to emergency response efforts and helps to prevent absenteeism, exclusions, and other societal and economic costs.

In the event of an outbreak, your school may be required to take measures to protect the student population or community at-large, such as excluding students. These lost days of school have impacts on a student's education and long-term success.

Case in Point:

Recent Colorado and national cases and outbreaks of vaccine-preventable diseases like measles, mumps, influenza, whooping cough and chickenpox highlight the importance of ensuring the children in Adams 12 Five Star Schools are fully immunized so that they, and the entire community around them, are protected from serious illness.

*These data include both public and private schools.

Percentage of Adams 12 Five Star Schools Students Fully Immunized By Vaccine, 2017-18*

Disease/Vaccine	Fully Immunized
Measles/ MMR	97%
Mumps/ MMR	97%
Rubella/ MMR	97%
Pertussis (Whooping Cough)/ DTaP	97%
Diphtheria/ DTaP	97%
Polio/ IPV	97%
Varicella (Chickenpox)/ VAR	97%

These levels of risk were determined using herd immunity thresholds for each disease in combination with the HP 2020 goals of 95%.

- Low Risk of Outbreak
- Moderate Risk of Outbreak
- High Risk of Outbreak

IMMUNIZATION in Boulder Valley School District, 2017-2018

How Is My District Doing?*

- The percent of students in Boulder Valley School District (BVSD) fully immunized for each vaccine ranges from **88%-91%** depending on the specific vaccine.
- Exemption rates for any vaccine range from **0%-50%** across individual schools, demonstrating high variability among schools within the district.
- 1,417** students in BVSD are exempt from one or more school-required vaccines.
- 1,313** students in BVSD have incomplete or missing records for one or more vaccines.

What Does This Mean for Our Schools?

Vaccination is important to emergency response efforts and helps to prevent absenteeism, exclusions, and other societal and economic costs.

In the event of an outbreak, your school may be required to take measures to protect the student population or community at-large, such as excluding students. These lost days of school have impacts on a student's education and long-term success.

Case in Point:

In 2017, **31 Boulder County students** were diagnosed with pertussis (whooping cough) while enrolled in school, and **five schools** in Boulder County had more than one confirmed case of pertussis. Public health pertussis notification letters were distributed to **11 schools** in the same school year.

*These data include both public and private schools.

Percentage of BVSD Students Fully Immunized By Vaccine, 2017-18*

Disease/Vaccine	Fully Immunized
Measles/ MMR	90%
Mumps/ MMR	88%
Rubella/ MMR	90%
Pertussis (Whooping Cough)/ DTaP	91%
Diphtheria/ DTaP	91%
Polio/ IPV	90%
Varicella (Chickenpox)/ VAR	88%

These levels of risk were determined using herd immunity thresholds for each disease in combination with the HP 2020 goals of 95%.

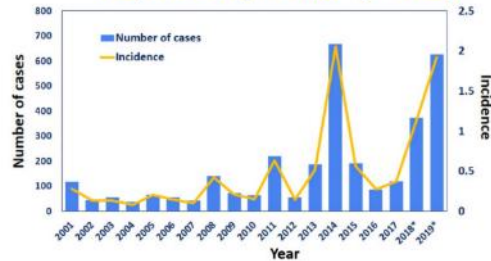
- Low Risk of Outbreak
- Moderate Risk of Outbreak
- High Risk of Outbreak

Growing Risk of Measles

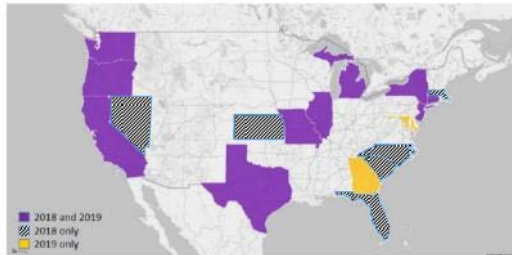
GLOBAL HEALTH

Measles Outbreak Infects 695, Highest Number Since 2000

Number and Incidence of Reported Measles Cases – U.S., 2001 – April 2019* (N=3215)

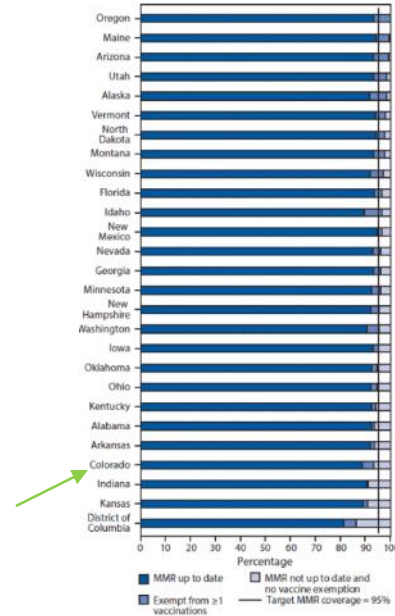


Jurisdictions reporting ≥ 1 outbreak-related case, 2018-2019*



Estimated Percentage of Kindergartners with Documented MMR Vaccine, 2017-18

MMWR
Oct 12, 2018



Colorado HB 19-1312

- CDPHE required to
 - Develop standardized form and submission process to claim exemptions
 - Develop & distribute educational materials
 - Develop annual report on exemptions
- State board of health required to develop:
 - Rules adopting the medical exemption recommendations from ACIP
 - Rules adopting hepatitis A, rotavirus, and meningococcal immunizations;
 - Inclusion of HPV and influenza initially proposed and dropped
- Submission of exemptions
 - Medical: MD, PA, NP completed form to be provided to school
 - Personal, religious: parent/student completed forms to be provided to state or local health dept
 - Follow-up year filings can be completed on-line
- Immunizations and exemptions to be entered into CIIS
 - Parent can opt of either

First Regular Session
Seventy-second General Assembly
STATE OF COLORADO

REENGROSSED

*This Version Includes All Amendments
Adopted in the House of Introduction*

HOUSE BILL 19-1312

LLS NO. 19-0699.04 Jacob Baus x2173

HOUSE SPONSORSHIP

Mullica, Arndt, Benavidez, Bird, Buckner, Buentello, Caraveo, Coleman, Duran, Esgar, Froelich, Gray, Hansen, Jaquez Lewis, Kennedy, Kipp, McCluskie, Melton, Michaelson Jenet, Roberts, Sirota, Snyder, Tipper, Valdez A., Cutter, Galindo, Garnett, Herod, Jackson, Kraft-Tharp, Lontine, Sullivan

SENATE SPONSORSHIP

Gonzales and Priola,

House Committees
Health & Insurance

Senate Committees
Finance

A BILL FOR AN ACT

101 **CONCERNING MODERNIZING IMMUNIZATION REQUIREMENTS FOR**
102 **SCHOOL ENTRY TO IMPROVE VACCINATION RATES.**

Science shows that vaccinations save lives

Posted Tuesday, April 23, 2019 4:57 pm



Guest column by Dr. John Douglas

Measles vaccinations almost wiped out the disease from the United States in 2000. Elimination meant measles no longer spread, because most people were vaccinated. However, in 2019, instead of celebrating public health successes, we are losing ground.

So far this year, the number of measles cases in the U.S. is the second highest since 2000. Today, there are outbreaks of measles in Washington state, New York, California, New Jersey and Michigan, and New York City just declared a public health emergency because the outbreak there had become so severe.

Such outbreaks are a blunt reminder of how vulnerable we are in Colorado. For the 2017-18 school year, Colorado's kindergarten vaccination rate for measles, mumps and rubella (MMR) ranked second to last in the U.S., with a coverage rate of 89 percent. Because measles is so highly contagious, we need 95 percent coverage to keep it under control and prevent an outbreak.

Vaccines are one of the greatest successes of our time — reducing illness, medical costs and emotional heartbreak for countless families. Vaccines have completely eradicated smallpox and are close to doing so for polio, they have also reduced disability and suffering from more than 18 diseases preventable by vaccines.

Yet, vaccines are victims of their own success. Keep in mind that because vaccines work so well to protect people, most of us haven't seen the devastating consequences of diseases such as measles and mumps. In 2017 in Colorado, more than 9,000 children were taken to the hospital because they were ill from a disease that could have been prevented by vaccination. Tri-County Health Department serves Adams, Arapahoe, and Douglas counties, and we are seeing measles, mumps and whooping cough re-emerge among unvaccinated people.

Officials urge vaccinations as measles threat spreads

Bill that would have modified state law on exemptions failed to pass state Legislature



SHUTTERSTOCK IMAGE

Updated Monday, May 6, 2019 1:38 pm

EDUCATED DECISION

Several state and national organizations oppose strict vaccination laws and promote informed consent and privacy rights. For example, Colorado Health Choice Alliance states that the reason is to inform consumers on the "safety, efficacy, history and ingredients of vaccines." Similarly, the National Vaccine Information Center says it offers information on vaccinations and health to encourage "educated decision-making."

Phil Silberman, president of the Colorado Health Choice Alliance Board of Directors, fully supports Colorado's current law on vaccines, he said. "The behavior objective should have the right to research and make an informed decision on vaccinations."

"It's a parent's right, as citizens' right, to choose whether to inject products into our bodies," Silberman said. "A vaccine can't be undone. You can't be unvaccinated."

Alex DeWind
adewind@coloradocommunitymedia.com

From Jan. 1 to April 26, 704 measles cases were reported in the United States, the most in 25 years, according to the Centers for Disease Control and Prevention.

A contentious bill that would have made it harder for parents to get vaccine exemptions for their children died with time running out in the final days of the legislative session, which closed May 3. But health experts say they will continue to stress the importance of vaccine requirements in Colorado, a state with historically low vaccination rates.

"Outbreaks happen in communities with low rates of vaccinations and spread really quickly," said Jessica Cataldi, a pediatrician and specialist in infectious diseases at Children's Hospital Colorado. "I think for Colorado, the best thing to do is to try to act now and act preventative before we are in the situation of an outbreak."

Colorado's vaccination rate in kindergarten-aged children is among the lowest in the country at roughly 89 percent, according to a recent CDC survey. To protect the population, health professionals say 95 percent of people should be vaccinated.

State Rep. Kyle Mullica, D-Thomson, one of three sponsors of House Bill 1312, called Colorado's low vaccination rates a "public health crisis." The state has had one confirmed case of measles in 2019.

Controversies over CO HB 19-1312

- Bill-specific
 - Degree of difficulty of filing exemptions
 - Use of ACIP language regarding medical exemptions
 - Inclusion of new vaccines
 - HAV, rotavirus, meningococcal included
 - HPV, influenza dropped
- General concerns
 - Vaccine side effects
 - Use of aborted fetal tissue in vaccine production
 - Confidentiality of CIIS
 - Suspicion of “big pharma”
 - Parental rights

Politics

‘Leave my family out of it’: Nurse-turned-legislator gets death threat over controversial vaccine bill



Voters head up the stairs to the rotunda in the Colorado State Capitol on Thursday in Denver. (David Zrubicki/AP)

By Eli Rosenberg
May 2

Kyle Mullica, a freshman member of Colorado’s House, came into office this past January with a sense of mission.

An emergency-room nurse, he had run a campaign based on his experience in the world of medicine. In an era where anxiety about health care is high. Even with his experience, he was surprised when during an introductory meeting with an official from the state’s Department of Public Health and Environment, he was told that Colorado was at the bottom nationwide for the percentage of children in kindergarten who were vaccinated against diseases such as measles, mumps and rubella. He had seen people coming into the ER with “vaccine-preventable” diseases like whooping cough, he said, but he was still shocked.

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Stance of Governor on CO HB 19-1312



Polis : 'No' to statewide immunization mandate but open to local county control of vaccination

By KARA MASON, Staff Writer - April 3, 2019

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FILE - This Wednesday, March 27, 2019 file photo shows a sign explaining the local state of emergency because of a measles outbreak at the Rockland County Health Department in Pomona, N.Y. Measles is spread through the air when an infected person coughs or sneezes. It's so contagious that 90 percent of people who aren't immunized are infected if exposed to the virus, according to the Centers for Disease Control and Prevention. (AP Photo/Seth Wising)

AURORA | Colorado Gov. Jared Polis' resistance to end state childhood immunization exemptions in Colorado could be resolved with local control.

Polis told the *Sentinel* in an editorial board meeting last week he prefers an educational campaign to increase the state's vaccination rates, but that he would be open to legislation allowing local health departments to make their own decisions about vaccination requirements.

"If the counties wanted to mandate, then I wouldn't be opposed to that," he said. "We should have these discussions at the level of government that is closest to people."

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Opinion Editor Dave Perry Local Columnists ZZ-oped

PERRY: Polis is right about educating Colorado vaccinaphobes and so wrong opposing a needed law

By DAVE PERRY, Sentinel Editor - March 27, 2019

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I agree with Gov. Jared Polis that Colorado needs to immediately invoke a widespread campaign to educate parents how safe childhood vaccines are and how critical it is to inoculate their kids.

Polis is gravely mistaken, however, in believing that education alone will do a damned thing.

There's no way even the most elaborate and expensive campaign will work to increase vaccination compliance among a community of precariously misinformed and deluded parents. These parents endanger not just their own children's health and lives, but that of everyone in the state.

Polis has repeatedly pushed back against the idea of changing state law to end the gaping loopholes that vaccine scofflaws use to keep from inoculating their children against diseases like mumps, measles, diphtheria, rubella and chicken pox. On a recent Colorado Public Radio interview, Polis made it sound like he might even veto a vaccination bill if one made it to his desk.

The problem is a looming national problem, but it's potentially even more dangerous in Colorado. That's because this state has the dubious distinction of having the worst vaccination rate in the nation. The worst.



Final Upshot: Not Enough Time



LOCAL POLITICS

Colorado House bill aimed at increasing vaccination rates moves forward

HB19-1312 would create a more formal process for vaccination exemptions, which the bill sponsor hopes will result in higher vaccination rates.

Author: Janet Cravetz
Published: 9:22 AM MDT April 24, 2019
Updated: 9:26 AM MDT April 24, 2019

DENVER — The Colorado House of Representatives approved a bill early Wednesday morning that is aimed at increasing vaccination rates among children, a release from the bill's sponsor said.

[House Bill 19-1312](#) was approved in a voice vote and a recorded vote will be taken at a later date, the release said.

If given final approval, [HB19-1312](#) would require the state health department to create a standardized and state-issued form and submission process for parents who claim a medical or religious exemption to vaccinations.

Here's a list of changes the bill would require.

- Creates a standardized exemption form and requires all exemptions be submitted to the Colorado Department of Public Health and Environment (CDPHE) or the local public health agency. Non-medical exemptions must be submitted in person to the CDPHE or local health agency; subsequent renewals can be submitted in person or online.
- Directs CDPHE to include immunization exemption information in its annual presentation to the General Assembly.
- Directs CDPHE to develop educational materials for health agencies and schools addressing the medical benefits of immunizations.
- Gives the Board of Health authority to determine school-required immunizations, based on recommendations from the Centers for Disease Control and Prevention (CDC).

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With time short, Colorado lawmakers abandon vaccination bill

By THE ASSOCIATED PRESS - May 2, 2019

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DENVER | Colorado lawmakers on Thursday abandoned legislation to make it harder for parents to opt their children out of vaccinations as time ran out in their legislative session.

With many bills still waiting for action, the state Senate decided not to take up the measure, effectively killing it because there won't be enough time to pass it before the session ends at midnight Friday.

The bill drew big crowds of vaccination opponents to the state Capitol and came amid the nation's worst outbreak of measles in 25 years. Backers of the proposal, including the American Academy of Pediatrics, said the bill was needed because the state's vaccination rate is around 89%, lower than the national average of 94% and not high enough to create "herd immunity" and avoid large outbreaks.

Colorado allows parents to opt their children out of vaccinations required by most schools and daycare centers for medical reasons with a doctor's note. Those who object to inoculations for religious or any other personal reason can also submit a statement to be exempted.

The bill would have created standardized forms for medical and the other exemptions and would limit the reasons for a medical exemption to those allowed by the federal Centers for Disease Control and Prevention. It would also require those seeking a religious or personal exemption to initially apply in person at their local health department or the state health department. Future exemptions could be requested online.

Gov. Jared Polis expressed concerns about the in-person applications so his approval of the bill was not assured.



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