Religious Vaccine Exemptions: Trends, Considerations, and Future Directions

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Disclosures

• None
Overview

• Objectives
• Background
• Trends
• Definitions & Demographics
• Religious Vaccine Considerations
• Colorado Religious Vaccine Exemption Law
• Pilot Study
• Conclusions
Objectives

1. Describe trends in rates of religious vaccine exemptions.
2. Describe Colorado’s religious vaccine exemption law.
3. Discuss key tenets and sacred texts from six faith traditions and how they may influence vaccine attitudes or practices.
4. Summarize results of a recent study of Denver religious leaders’ vaccine attitudes, practices, and congregational experiences.
Definitions

• **Religion**
  • “The service and worship of God or the supernatural”
  • “A cause, principle, or system of beliefs held to with ardor and faith”

• **Religious Vaccine Exemption (RVE)**
  • Documented refusal of a vaccine based on sincerely held religious beliefs.
    • Differs from “Philosophical” or “Personal Belief” vaccine exemptions
  • Ease with which a parent may obtain a RVE for their child varies
    • Easy – Medium – Difficult

Quoted definitions per Merriam-Webster Dictionary
Mean rates (with 95% C.I. bars) of non-medical exemptions per year for kindergartners in 48 states and D.C. (excluding Mississippi and West Virginia), 2006-2011.⁴
Kindergartner Vaccine Exemption Rates by Available Exemption Types

Vaccine Exemption Rate (%)

RVE Rate - RVE Only
RVE Rate - RVE & PBVE
PBVE Rate - RVE & PBVE

2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
2016-2017
Update: Poliomyelitis Outbreak -- Netherlands, 1992

The outbreak in the Netherlands of poliomyelitis among unvaccinated persons who are members of religious groups (1). From September 17 through December 5, 1992, 54 cases of poliomyelitis were reported to the Netherlands' Office of Surveillance of Communicable Diseases. Of the 54 patients, 41 (76%) had paralytic manifestations of this illness; one neonate died, and 12 patients had aseptic meningitis. Laboratory confirmation: 40 patients had wild poliovirus type 3 isolated from stool, and 11 had IgM-specific antibody. Of the reported cases, 49% occurred among unvaccinated (n=53) or inadequately vaccinated (n=1) persons belonging to religious groups that do not accept vaccination. Patients ranged in age from less than 1 month to 69 years; the most severely affected provinces are South Holland and North Brabant.

Texas Megachurch At Center Of Measles Outbreak

September 1, 2013 - 8:11 AM ET
Heard on Weekend Edition Sunday

LAUREN SILVERMAN
Religious Demographics
• 2010 Study of over 2500 censuses/databases
  • 2.2 billion Christians
  • 1.6 billion Muslims
  • 1.0 billion Hindus
  • 500 million Buddhists
  • 14 million Jews

• Nearly 8 in 10 people belong to a religious group
• As is worldwide, nearly 8 in 10 Americans claim a religious group

http://www.pewresearch.org/fact-tank/2016/11/14/if-the-u-s-had-100-people-charting-americans-religious-affiliations/
• In Denver, about 5 in 10 individuals claim a religious affiliation
  • Other: Jewish & Buddhist affiliations rank highest
Religious Traditions – Origins & Tenets
Buddhism

• Traditions, beliefs, and practices attributed to Siddhartha Gautama (i.e., the Buddha)
  • Taught in eastern India 6th - 4th centuries BCE
• Insights meant to help end ignorance, craving, and suffering
  • Attain Nirvana (freedom from suffering)
• No central text or central authority
  • Prohibition of killing humans/animals key
• First written account of variolation involves a Buddhist nun in 10th century CE
Christianity

• Followers of Jesus, whom they consider the Christ (i.e. Messiah, anointed one, Son of God)
  • Taught in Judea around 20 CE; religion originated as a Jewish sect around 30 CE

• Comprised of many groups - Roman Catholic, Eastern Orthodox, & Protestant Churches

• Jesus’ life and teachings are “Good News” and advocate love for God and neighbor

• Teachings stored in the New Testament, but Christians also revere the Hebrew Bible (Old Testament)

https://simple.wikipedia.org/wiki/Christianity
Jainism

• Founded on teachings of Nataputta Vardhamana (also called Mahavira) in India between 9th - 6th centuries BCE
  • Prescribed a path of non-violence toward all beings
• Scriptures encompass teachings and are known as the *Jaina Sutras*
• Tradition recognizes a hierarchy of life forms, although all forms are to be respected
  • Followers are vegetarians or vegans
  • Killing of micro-organisms can be justifiable when saving the health of “higher” lifer forms

Judaism

• Based on the relationship between God and the people of Israel, including its leaders (e.g. Jacob)
• Sacred text is the *Tanakh*, or Hebrew Bible, and includes teachings, prophesies, and writings
  • Oldest books date to 1200 BCE or earlier
  • Writings expounded on in later texts (e.g. Talmud)
• Jewish law emphasizes actions to follow divine commands
  • Emphasize love for God, health of community, care for disadvantaged, and adherence to various laws
• Major branches include Orthodox, Conservative, Reform, and Reconstructionist
Hinduism

• No single founder; the Sanatan Dharma (Eternal Tradition) as revealed in Vedic sacred texts
  • Texts transcribed from ~1500 BCE to 500 BCE
• Important texts include the Shrutas and Smritis
  • Focus given to ethics and metaphorical meanings, as revealed to followers by spiritually elevated gurus
• Advocate non-violence and respect for life
• Divinity believed to permeate all things, including plants and non-human animals
  • Cow is venerated as a caretaking, maternal figure

Islam

• Professes the teachings, example of Muhamad (570-632 CE), the last messenger of Allah (God)
  • Descendant of Abraham through his son Ishmael
• Two major sects: Sunni and Shi’ah
• Sacred texts are found in the Qur’an and include the teachings of Muhamad
  • Opinions/rulings on Quranic interpretations are issued as fatwas by Islamic scholars with varying strictness
• Five pillars of Islam: faith, prayer, charity, fasting, and pilgrimage to Mecca (Hajj)
  • Vaccines are required for the Hajj; focus on purity

https://www.commisceo-global.com/images/easyblog_articles/1672/kaaba-mecca.jpg
Religious Traditions, Sacred Texts & Vaccines
Review

What the World’s religions teach, applied to vaccines and immune globulins

John D. Grabenstein *1

Merck Vaccines, 770 Sumneytown Pike, WP97-B364, West Point, PA 19426, USA

ABSTRACT

For millennia, humans have sought and found purpose, solace, values, understanding, and fellowship in religious practices. Buddhist nuns performed variolation against smallpox over 1000 years ago. Since Jenner developed vaccination against smallpox in 1796, some people have objected to and declined vaccination, citing various religious reasons. This paper reviews the scriptural, canonical basis for such interpretations, as well as passages that support immunization. Populous faith traditions are considered, including Hinduism, Buddhism, Jainism, Judaism, Christianity, and Islam. Subjects of concern such as
Religious Tenets of Import

- Jainism, Buddhism, and Hinduism
  - Respect for all life, favoring nonviolence
  - Regretful acceptance of cooking food, boiling water, using antibiotics & vaccines

- Judaism
  - Imperative for *Pikuakh nefesh*, acting to save one’s own or another’s life
    - Over-rides virtually any other religious consideration
  - Dietary kosher limitations
    - Includes medications with porcine components
    - Applies to oral administration, but not injections
  - Duty to protect one’s children and neighbors through anticipation
“When you build a new house, make a parapet around your roof so that you may not bring the guilt of bloodshed on your house if someone falls from the roof”

- Deuteronomy 22:8 (Hebrew Bible)
Religious Tenets of Importance

• Christianity
  • Vaccines with remote fetal implications - rubella, polio, varicella, hepatitis A, adenovirus, and rabies vaccinations
    • WI-38 cell line – Sweden, 1961
    • MRC-5 cell line – UK, 1965
  
• Concern that the “body is a temple not to be defiled” (1 Corinthians 6:19-20)
  • Contrasts with other scriptural passages, modern quality-control requirements

• Jehovah’s Witnesses’ concern regarding blood products
  • “I will set my face against any Israelite or any foreigner residing among them who eats blood, and I will cut them off from the people” – Leviticus 17:10
Mrs Debra L.Vinnedge Vatican City, June 9 2005
Executive Director, Children of God for Life
943 Deville Drive East
Largo, Florida
33771
Stati Uniti

Dear Mrs Debra L.Vinnedge,

On June 4, 2003, you wrote to His Eminence Cardinal Joseph Ratzinger, with a clarification about the liceity of vaccinating children with vaccines prepared under parents of these children to oppose such a vaccination when made at school said that catholic parents were often challenged by State Courts, Health Offices, vaccination.
“One must follow a certain conscience even if it errs, but there is a responsibility to inform one's conscience properly. There would seem to be no proper grounds for refusing immunization against dangerous contagious disease, for example, rubella, especially in light of the concern that we should all have for the health of our children, public health, and the common good.”
“Vaccination never prevented anything and never will, and is the most barbarous practice... Use your rights as American citizens to forever abolish the devilish practice of vaccinations.”

- Golden Age, Oct 12, 1921 (p. 17)
“Medical science, in fact, claims that vaccination actually results in building up the vitality of the blood to resist the disease against which the person is inoculated. But, of course, that is a question for each individual concerned to decide for himself and as he sees it to be Jehovah’s will for him.”

- Advocates for Jehovah’s Witness Reform on Blood

http://ajwrb.org/watchtower-policy-on-vaccination
Religious Tenets of Importance

• Islam

  • Law to protect life, principle of preventing harm (izalat al-dharrar)
    • Principle of the public interest (maslahat al-ummah)

• Concern for vaccine components that are haram (forbidden)
  • Transformation of components may develop them into halal products
  • Extensive dilution of components may result in minute quantities
  • Vaccines are medicinal, not intended for diet purposes
“God has not made things that are unlawful for you to consume to be your medicine”

- Muhamad
“All are afraid of the stick, all hold their lives dear. Putting oneself in another’s place, one should not beat or kill others.”

- Dhammapada X:130
Judaism

“Do not do anything that endangers your neighbor’s life. I am the LORD.”

- Leviticus 19:16
Christianity

“No one should seek their own good, but the good of others.”

- 1 Corinthians 10:24
Islam

“Allah enjoins justice, and the doing of good to others; and giving like kindred.”

- Al Qur’an 16:91
“This review identified multiple religious doctrines or imperatives that call for preservation of life, caring for others, and duty to community.”
“This review revealed few canonical bases for declining immunization [...] the preponderance might more accurately be defined as philosophical.”
Colorado’s Religious Vaccine Exemption Law
Colorado’s Religious Vaccine Exemption Law

• Colorado allows both religious and personal belief exemptions

• “State of the State’s Immunizations” report, 2016-2017
  • Compiled by the Colorado Children’s Immunization Coalition
  • Identified ~7% of all Colorado childhood vaccine exemptions as religious

• At 7%, Colorado may have the highest rate of RVEs in the USA
CO Rev Stat § 25-4-903 (b)

“The parent, guardian, or student is an adherent to a religious belief whose teachings are opposed to immunizations”
Vaccines are one of the greatest public health achievements of the past century and save an estimated 3 million children’s lives every year. The Colorado Department of Public Health and Environment strongly supports vaccination as one of the easiest and most effective tools in preventing diseases that can cause serious illness and even death. For nearly all children, the benefits of preventing disease with a vaccine far outweigh the risks. Declining to follow the Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices (ACIP) immunization schedule for number, space and timing of doses, may endanger an unvaccinated child’s health and others who come into contact with him/her. Some vaccine-preventable diseases are common in other countries and unvaccinated children could easily get one of these diseases while traveling or from a traveler.

Colorado law C.R.S. § 25-4-902 requires all students attending any school in the state of Colorado to be vaccinated against certain vaccine-preventable diseases as established by Colorado Board of Health rule 6 CCR 1009-2, unless an exemption is filed. This law applies to
Type of Non-Medical Exemption Claimed:

- Personal Belief
- Religious

Student Information: (Completed by parent/guardian, emancipated student or student over 18 years old)

Check if an emancipated student or student over 18 years old

Last Name
First Name
Middle Name
Gender
Date of Birth (mm/dd/yyyy)
Grade
Street #
Street
Street
School/Licensed Child Care Facility Information

Search for your/your child's school, child care, preschool or camp. If not listed, click NEW to add.

Search Child Care Facilities/ Preschool

1. 2017 Recommended Immunizations from Birth through 6 Years Old. Based on this schedule, a non-medical exemption form would be submitted at 2 months, 4 months, 6 months, 12 months, and 18 months of age.


3. Under Colorado law you have the option to exclude your child’s/your information from CIIS at any time. To opt out of CIIS, go to: www.colorado.gov/cdphe/ciis-opt-out-procedures. Please be advised you will be responsible for maintaining your child's/your immunization records to ensure school compliance.

Last Reviewed September 2017

Required Vaccines for Entering School
The information below is provided to ensure parents/guardians/students are informed about the
Drag and drop the vaccines you wish to decline into the RED BOX below:

**Hepatitis B**
Unvaccinated children may be at increased risk of developing hepatitis B if exposed to this disease. Serious symptoms and effects include jaundice, life-long liver problems such as liver damage, scarring, liver cancer, and death. For more information: [http://www.cdc.gov/vaccines/hcp/vis/vis-statements/hep-b.pdf](http://www.cdc.gov/vaccines/hcp/vis/vis-statements/hep-b.pdf)

**Diphtheria, tetanus, pertussis (DTaP, Tdap)**
Unvaccinated children may be at increased risk of developing diphtheria, tetanus and/or pertussis if exposed to these diseases. Serious symptoms and effects of diphtheria include heart failure, paralysis, breathing problems, coma, and death. Serious symptoms and effects of tetanus include "locking" of the jaw, difficulty swallowing and breathing, seizures, painful tightening of muscles in the head and neck, and death. Serious symptoms and effects of pertussis (whooping cough) include severe coughing fits that can cause vomiting and exhaustion, pneumonia, seizures, brain damage, and death. For more information: [http://www.cdc.gov/vaccines/hcp/vis/vis-statements/dtap.pdf](http://www.cdc.gov/vaccines/hcp/vis/vis-statements/dtap.pdf) and [http://www.cdc.gov/vaccines/hcp/vis/vis-statements/tdap.pdf](http://www.cdc.gov/vaccines/hcp/vis/vis-statements/tdap.pdf)

**Haemophilus influenzae type b (Hib)**
Unvaccinated children may be at increased risk of developing invasive Hib disease if exposed to this disease. Serious symptoms and effects include bacterial meningitis, pneumonia, severe swelling in the throat, brain damage, deafness, infections of the blood, joints, bones, and covering of the heart, and death. For more information: [http://www.cdc.gov/vaccines/hcp/vis/vis-statements/hib.pdf](http://www.cdc.gov/vaccines/hcp/vis/vis-statements/hib.pdf)
Statement of Exemption

I am the parent/guardian of the above-named student or am the student himself/herself (emancipated or over 18 years of age) and am declining the vaccine(s) indicated above due to a religious or personal belief that is opposed to vaccines. The information I have provided on this form is complete and accurate.

- I may change my mind at any time and accept vaccination(s) for my child/myself in the future.
- I can review evidence-based vaccine information at www.colorado.gov/cdphe/immunization-education, or www.ImmunizeforGood.com for additional information on the benefits and risks of vaccines and the diseases they prevent.
- I can contact the Colorado Immunization Information System (CIIS) at www.ColoradoIIS.com or my health care provider to locate my child’s/my immunization record.

I acknowledge that I have read this document in its entirety.
(Optional) I authorize my/my student's school to share my/my student's immunization records with state/local public health agencies and the Colorado Immunization Information System, the state's secure, confidential immunization registry.

☐ Parent/Guardian/Student (emancipated or over 18 yrs old) signature

First Name/Last Name

Submit & Print

If you choose this option:

- You will be able to print this form for your records.
- Your/your child's exemption information will be added to the Colorado Immunization Information System (CIIS).
- If your/your child's school participates in CIIS, they will be able to access the exemption information you submitted.
- If your/your child's school does not participate in CIIS, you will need to submit a paper exemption form to your school.
Colorado’s Religious Vaccine Exemption Law

• Considered “Easy” to obtain
  • No discussion with religious leader necessary
  • No formal documentation of religious tradition’s stance on vaccines needed
  • No notarization necessary
Pilot Study
Objectives

• **Primary**: Describe Denver religious leaders’ (RLs) attitudes, practices, and congregational experiences with childhood vaccines.

• **Secondary**: Identify vaccine hesitant religious leaders (VHRLs) and compare them to non-hesitant RLs.
Design & Methods

- Religious organizations (ROs) in Denver identified via 2010 Census data
  - Data collected by Association of Statisticians of American Religious Bodies (ASARB) and hosted on Association of Religion Data Archives (ARDA) website
- Each RO contacted 3 times by phone; received up to 5 follow-up e-mails
- 1 RL from each organization asked to complete online survey
  - Personal attitudes
    - Validated vaccine hesitancy (VH) survey tool – Parent Attitudes about Childhood Vaccines (PACV) – developed by Douglas J. Opel and colleagues\textsuperscript{5,6}
  - Personal practices
  - Congregational experiences
- Data analysis performed with $R$ (Vienna, Austria)
Results

Distribution of respondents and non-respondents, axes deidentified to preserve anonymity. The response rate was 33% (109/334).
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Respondents (n = 109)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age in years (SD)</td>
<td>55 (13)</td>
</tr>
<tr>
<td>Male gender % (n)</td>
<td>79 (86)</td>
</tr>
<tr>
<td>English primary language % (n)</td>
<td>97 (106)</td>
</tr>
<tr>
<td>Race/ethnicity % (n)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>75 (82)</td>
</tr>
<tr>
<td>Black</td>
<td>11 (12)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5 (5)</td>
</tr>
<tr>
<td>Other</td>
<td>9 (10)</td>
</tr>
<tr>
<td>Length of service as religious leader % (n)</td>
<td></td>
</tr>
<tr>
<td>&lt; 10 years</td>
<td>21 (23)</td>
</tr>
<tr>
<td>≥ 10 years</td>
<td>79 (86)</td>
</tr>
</tbody>
</table>
### Characteristics

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<thead>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Relationship status % (n)</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>79 (86)</td>
</tr>
<tr>
<td>Single</td>
<td>15 (16)</td>
</tr>
<tr>
<td>Other</td>
<td>6 (7)</td>
</tr>
<tr>
<td><strong>Parental status % (n)</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>76 (83)</td>
</tr>
<tr>
<td>No</td>
<td>24 (26)</td>
</tr>
<tr>
<td><strong>Religious tradition % (n)</strong></td>
<td></td>
</tr>
<tr>
<td>Buddhism</td>
<td>2 (2)</td>
</tr>
<tr>
<td>Catholicism</td>
<td>11 (12)</td>
</tr>
<tr>
<td>Judaism</td>
<td>2 (2)</td>
</tr>
<tr>
<td>Orthodox Christianity</td>
<td>4 (4)</td>
</tr>
<tr>
<td>Protestant Christianity</td>
<td>73 (80)</td>
</tr>
<tr>
<td>Unity Church</td>
<td>2 (2)</td>
</tr>
<tr>
<td>Other</td>
<td>6 (7)</td>
</tr>
</tbody>
</table>
### Characteristics

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Congregation percent children % (n)</strong></td>
<td></td>
</tr>
<tr>
<td>&lt; 10%</td>
<td>30 (33)</td>
</tr>
<tr>
<td>≥ 10%</td>
<td>70 (76)</td>
</tr>
<tr>
<td><strong>Congregation predominant race/ethnicity % (n)</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>62 (68)</td>
</tr>
<tr>
<td>Black</td>
<td>13 (14)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5 (5)</td>
</tr>
<tr>
<td>Other</td>
<td>20 (22)</td>
</tr>
<tr>
<td><strong>Congregation predominant socioeconomic status % (n)</strong></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>10 (11)</td>
</tr>
<tr>
<td>Medium/High</td>
<td>90 (98)</td>
</tr>
</tbody>
</table>
Results

• Mean Vaccine Hesitancy score 37±19 (PACV > 50 indicates hesitant)
  • 25% of RLs (27/109) were Vaccine Hesitant RLs (VHRLs)
  • VHRL PACV score (66±10) higher than non-VHRLs score (28±10), p < 0.01
  • No difference in mean score across traditions on ANOVA (p = 0.56)

• 42% RLs agreed primary religious text supported childhood vaccines
  • 24% unsure
  • 34% disagreed
Vaccination schedule and flu shot status of RL’s youngest child
RLs’ primary vaccine information sources (n)
Know a child not immunized for religious reasons?

- Yes: 0%
- No: 100%

Asked about vaccines by a congregant?

- Yes: 50%
- No: 50%

Spoken about vaccines to congregation?

- Yes: 10%
- No: 90%
Vaccine topics discussed in sermons & congregant question topics (n)
RLs’ agreement with existence of Colorado vaccine exemption laws (n)
Table 2. Comparison of VHRLs to non-VHRLs

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>VHRLs (n = 27)</th>
<th>Non-VHRLs (n = 82)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>If parent, vaccine schedule for youngest child % (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended</td>
<td>38 (8)</td>
<td>92 (57)</td>
<td>&lt; 0.0001*</td>
</tr>
<tr>
<td>Alternative</td>
<td>62 (13)</td>
<td>8 (5)</td>
<td></td>
</tr>
<tr>
<td>If parent, gave flu shot to youngest child in 2016 % (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7 (2)</td>
<td>46 (38)</td>
<td>0.0002*</td>
</tr>
<tr>
<td>No / Don't Know</td>
<td>93 (25)</td>
<td>54 (44)</td>
<td></td>
</tr>
<tr>
<td>RLS' attitudes to Colorado vaccine exemption laws % (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support religious exemptions†</td>
<td>70 (19)</td>
<td>49 (40)</td>
<td>0.04*</td>
</tr>
<tr>
<td>Support philosophical exemptions†</td>
<td>74 (20)</td>
<td>40 (49)</td>
<td>0.004*</td>
</tr>
</tbody>
</table>

*Indicates statistical significance at the p<0.05 level. †1-tailed Fischer's exact tests. All other comparisons 2-tailed.
Table 2. Comparison of VHRLs to non-VHRLs

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<th>Non-VHRLs (n = 82)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLs' primary sources of vaccine information % (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctors</td>
<td>26 (7)</td>
<td>73 (60)</td>
<td>&lt; 0.0001*</td>
</tr>
<tr>
<td>Internet</td>
<td>15 (4)</td>
<td>2 (2)</td>
<td>0.03*</td>
</tr>
<tr>
<td>Other religious leaders</td>
<td>7 (2)</td>
<td>5 (4)</td>
<td>0.64</td>
</tr>
<tr>
<td>Other religious organizations</td>
<td>11 (3)</td>
<td>2 (2)</td>
<td>0.10</td>
</tr>
<tr>
<td>Religious texts</td>
<td>19 (5)</td>
<td>9 (7)</td>
<td>0.17</td>
</tr>
<tr>
<td>RLs' agreement with vaccination messages % (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary religious text supports vaccination</td>
<td>19 (5)</td>
<td>50 (41)</td>
<td>0.006*</td>
</tr>
<tr>
<td>Vaccinate to protect those who can't get vaccines</td>
<td>48 (13)</td>
<td>94 (77)</td>
<td>&lt; 0.0001*</td>
</tr>
</tbody>
</table>

*Indicates statistical significance at the p<0.05 level.
†1-tailed Fischer's exact tests. All other comparisons 2-tailed.
Discussion

• Mean RL PACV score (37) and proportion of VHRLs (25%) similar to reported values for baseline population\(^9\) (21.8-23.9; 15.1-25%).

• Many Denver RLs discuss vaccines with their congregants
  • 2013 measles outbreak in Texas congregation attributed in part to RL’s views\(^{10,11}\)
  • Discussions with RLs improved MMR uptake in Somali children during outbreak\(^{12}\)

• Denver VHRLs differed from non-hesitant RLs in several ways
  • Vaccine information sources, use of alternative vaccine schedules, etc.
Limitations

- One urban county sampled
- Responses of non-responders may have differed from responders
- Study not powered to detect differences between congregations
- Did not account for opening of new congregations, only closure of existing ones
Study Conclusions

- RLs could be a community partner to increase childhood vaccination
  - Some evidence this works

- Further study needed to understand vaccine beliefs and reasons for vaccine hesitancy among RLs and within religious communities
Overview – A Summary

• Objectives
• Background
• Definitions & Demographics
• Religious Vaccine Considerations
• Trends
• Colorado Religious Vaccine Exemption Law
• Pilot Study
• Conclusions
Final Thoughts
Final Thoughts

• Religious Vaccine Exemptions are available in nearly every US state

• US religious vaccine exemption rates were increasing but now appear stable
  • Colorado may have one of the nation’s highest rates at ~7%

• Populous religious traditions’ texts and teachings include themes supportive of vaccination

• Religious leaders are discussing vaccines with their congregants
Final Thoughts

• What to do if confronted by the issue?

  • Ask the patient/family if they belong to a religious congregation
    • If so, encourage them to speak with their religious leader

  • Form a relationship with the family – ask them to see you again
    • Try and discern if there are cultural vaccine-related suspicions at play

  • Look online (PubMed, CHOP Vaccine education center) for materials
    • Look up references in the Grabenstein article pertaining to their specific belief

  • Contact me: joshua.williams@dhha.org
“Let our exertions be universal, immediate, and zealous, and I am very sure a death by the small-pox will be brought forward as a very rare instance indeed; in short, I believe that no one disease will be less fatal than that which is now so much the dreaded scourge of the human race.”
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References


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Questions?