Immunization Coverage in Texas

Child and Adolescent Vaccination Coverage

Immunization Branch

www.ImmunizeTexas.com
Outline

• National Immunization Survey Coverage
• Adolescent Vaccination Coverage
• School Vaccination Coverage
• Conscientious Exemptions in Texas
• Exemptions and Pertussis Analysis
2013 Child and Teen NIS

- Assess immunization levels among
  - Pre-school children, 19-35 months old
  - Adolescents 13-17 years of age
- Conducted annually by CDC
- Population-based, random-digit-dial sample of phone numbers followed by reviewing the child’s vaccination record from the provider
- Provides a “Report Card” to let us know how well we are doing in protecting our nation’s children against vaccine-preventable diseases
- The NIS provides national and state estimates of vaccination coverage-including new vaccines as they are licensed and recommended for use
Vaccination Coverage Among Children 19-35 months, Texas, 2008-2013 National Immunization Survey

Percent vaccinated

Year

2008 2009 2010 2011 2012 2013

4+ DTaP
3+ Polio
1+ MMR
Hib†
3+ HepB
1+ Var
4+ PCV
2+ HepA
Rotavirus¶
4:3:1:3*:3:1:4#
Texas ranks 18th in the nation with a 72.5% coverage level for the 4:3:1:3:3:1:4 series which includes the full series of Hib. This is a statistically significant increase of 7.7 percentage points from the 2012 coverage level.

4-3-1-3-3-1-4: 4 doses DTP, 3 doses Polio, 1 dose MMR, 3 doses of Hib, 3 doses Hep B, 1 or more doses of varicella, and 1 or more doses of pneumococcal vaccine.
Adolescent Vaccination Rates in Texas From 2008-2013, NIS-Teen

- ≥ 1 Tdap
- ≥ 1 MenACWY
- ≥ 1 HPV (≥ 3 doses HPV)

Percent Vaccinated (%): 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0
Comparison of HPV Vaccination Coverage for Teens Above and Below Poverty, NIS Teen, Texas, 2013

<table>
<thead>
<tr>
<th></th>
<th>FEMALE</th>
<th></th>
<th></th>
<th>MALE</th>
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<tbody>
<tr>
<td></td>
<td>≥ 1 HPV</td>
<td>≥ 2 HPV</td>
<td>≥ 3 HPV</td>
<td>HPV 3 dose series completion</td>
<td>≥ 1 HPV</td>
<td>≥ 2 HPV</td>
<td>≥ 3 HPV</td>
<td>HPV 3 dose series completion</td>
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<tr>
<td>Above</td>
<td>56.2</td>
<td>47.5</td>
<td>40</td>
<td>75.2</td>
<td>32</td>
<td>24.4</td>
<td>13.5</td>
<td>45.7</td>
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<td>Below</td>
<td>58.9</td>
<td>47.9</td>
<td>41.4</td>
<td>80.1</td>
<td>45.2</td>
<td>31.8</td>
<td>21.5</td>
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</table>

% Vaccinated

= | Vaccination Status | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90

- | Above | Below | Above | Below | Above | Below | Above | Below | Above | Below | Above | Below |

HPV 3 dose series completion
Percent of Texas Kindergarten Students Completely Vaccinated (2013-14)

- DTaP: 97.2%
- Hepatitis A: 97.2%
- Hepatitis B: 98.1%
- MMR 2: 97.5%
- Polio: 97.4%
- Varicella 2: 97.2%
Estimated Vaccine Coverage in Texas Public School for 7th Grade Students (2013-14)

- **Tdap/Td**: 97.1%
- **Polio vaccine**: 98.8%
- **MMR (or measles) vaccine – 2nd dose**: 99.1%
- **Varicella vaccine**: 97.4%
- **Hepatitis B vaccine**: 98.9%
- **Meningococccal vaccine**: 96.6%
Texas began allowing exemptions from immunizations in 2003-04. Exemptions were allowed to be requested via the internet in 2007-08.

Conscientious Exemptions Reported at Schools 2003-2013
Exemptions and Vaccine Preventable Diseases

• Children with exemptions are at increased risk of contracting and transmitting vaccine-preventable diseases such as pertussis.

• Despite high immunization coverage levels in Texas, pockets with high rates of exemptions can occur that may potentially increase the risk of transmission of vaccine preventable diseases.

• Previous studies have shown the incidence of measles and pertussis among vaccinated children in a county was associated with the frequency of exemptions in that county.
Study Overview

• Objective
  – Determine whether there is an association between the number and concentration of reported cases of pertussis disease in a zip code and the number and concentration of individuals for whom COs were requested

• Methods
  – Pertussis incidence by zip code for children 0-18
  – Conscientious exemption request by zip code
  – Conducted analysis in SAS and ArcGIS
  – Hot Spot Analysis
2013 Conscientious Exemption Hot Spots
2013 Pertussis Disease Hot Spots
## Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Individuals who Requested Conscientious Exemptions</th>
<th>Pertussis Cases in Persons 0-19 Years</th>
<th>Correlation (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>30,980</td>
<td>754</td>
<td>0.44</td>
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<tr>
<td>2012</td>
<td>46,406</td>
<td>1,761</td>
<td>0.56</td>
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<tr>
<td>2013</td>
<td>44,051</td>
<td>3,250</td>
<td>0.64</td>
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</table>
Study Conclusions

• The findings of the study suggest that there is an association between pertussis disease and individuals for whom conscientious exemptions were requested.

• The findings are consistent with previous study conducted in 2009.
Questions