



Reducing Vaccine-Preventable Disease in Texas: Strategies to Increase Vaccine Coverage Levels

**As Required By
Texas Health and Safety Code, Chapter 161:
Sections 161.0041, 161.0074, and 161.00706**



**Department of State Health Services
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Executive Summary

The Department of State Health Services (DSHS) is charged with preventing and controlling disease in Texas. Vaccination is one of the surest way to avoid many diseases. Over the past year, Texas has made progress in increasing vaccine coverage levels; however, there are areas where improvement is still needed.

According to the 2015 National Immunization Survey-Child, Texas made significant gains in coverage levels for the 4:3:1:3:3:1:4¹ combination series for children 19-35 months old. The 2015 coverage rate was 71.2 percent, an increase of 7.2 percent over 2014, and one percentage point below the national average of 72.2 percent. The increase indicates that efforts to improve uptake of the final dose in the series were effective.

Texas also made gains in coverage for human papillomavirus (HPV) and meningococcal vaccines. In 2015, the rate for one does of HPV vaccine increased by 4.8 percent for males and 9.4 percent for females; and for three doses, the rate increased by 6.3 percent for males and 7 percent for females. Rates for meningococcal conjugate vaccine increased from 88.6 percent in 2014 to 89.6 percent in 2015, 8.3 percent higher than the national average.

In spite of progress, coverage for the 4:3:1:3:3:1:4 combination series and the HPV vaccine lag behind national averages.

In recent years, DSHS has employed several strategies to increase coverage levels, including promoting a medical home, working with providers to make strong vaccination recommendations, and promoting the use of ImmTrac, the State's immunization registry system. These strategies have proven effective in increasing coverage levels and are the foundation for a successful immunization program.

To help expand immunization services across Texas in the coming biennium, DSHS has contracted with 50 local health departments (LHD) to provide vaccines. For 2017, DSHS has made awards totaling \$15.5 million in state and federal funds.

While recent progress is encouraging, ongoing efforts by DSHS and our many immunization partners are essential for ensuring that children and adults in communities across Texas are protected from vaccine-preventable diseases.

Introduction

The 78th Legislature, Regular Session, 2003 adopted legislation, codified in the Texas Health and Safety Code (Sections [161.0074](#), [161.0041](#), and [161.00706](#)), requiring DSHS to develop ways to increase immunization rates using state and federal resources, and submit a report by September 30 of each even-numbered year to the Governor, Lieutenant Governor, Speaker of the House, Legislative Budget Board, and appropriate committees of the Legislature.

¹ The 4:3:1:3:3:1:4 vaccination combination series includes four doses of diphtheria/tetanus/pertussis vaccine, three doses of polio vaccine, one dose of measles/mumps/rubella vaccine, three or four doses of Hib vaccine, three doses of hepatitis B vaccine, one dose of varicella vaccine, and four doses of pneumococcal conjugate vaccine.

The report must:

- Include the current immunization rates by geographic region of the state, where available
- Focus on the geographic regions of the state with immunization rates below the state average for preschool children
- Describe the approaches identified to increase immunization rates in underserved areas and the estimated cost for each
- Identify changes to department procedures needed to increase immunization rates
- Identify the services provided under, and provisions of, contracts entered into by the department to increase immunization rates in underserved areas
- Identify performance measures used in contracts to increase immunization rates in underserved areas
- Include the number and type of exemptions used in the past year
- Include the number of complaints received by the department related to the department's failure to comply with requests for exclusion of individuals from the registry
- Identify all reported incidents of discrimination for requesting exclusion from the registry or for using an exemption for a required immunization
- Include department recommendations about the best way to use, and communicate with, local registries in the state
- Include ways to increase provider participation in the registry

Background

Vaccines are recognized as one of the top ten public health successes of the 20th century. Diseases including measles, mumps, rubella, diphtheria, and polio were once widespread. Today, vaccine-preventable diseases (VPDs) are rare in the United States due to concerted efforts to vaccinate the public. Yet, every year Texans die from VPDs or suffer from their complications.

A highly vaccinated population reduces the incidence of disease and safeguards public health. DSHS has worked with stakeholders in the statewide immunization system² to implement strategies to improve vaccine coverage levels in children.

Currently, low vaccination rates for human papillomavirus (HPV) are a concern. HPV causes cervical, oropharyngeal, rectal, anal, and penile cancers. In Texas, HPV vaccination rates are lower than the national average and lag behind other adolescent vaccination rates.

² The Texas immunization system is a complex partnership that integrates federal agencies and programs, state and local governments, schools, health care providers, employers, insurers and health plans, vaccine manufacturers, and others in the private sector.

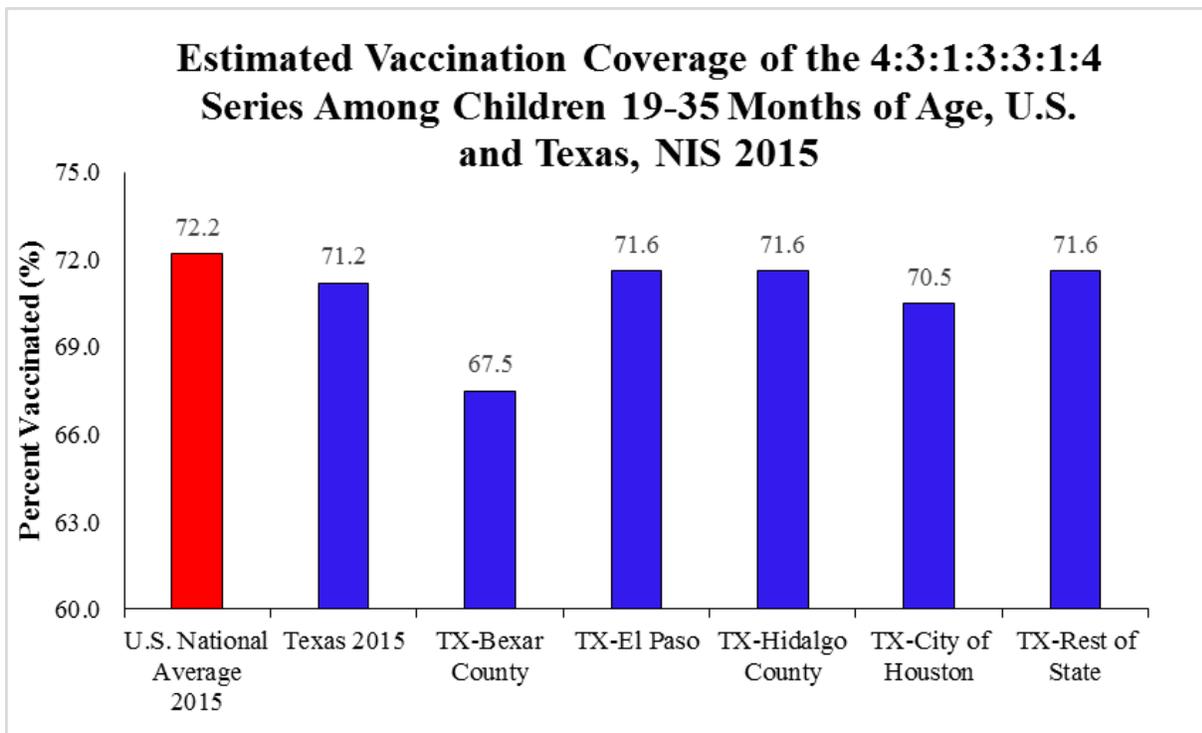
Immunization Coverage Rates

National Immunization Survey-Child

The National Immunization Survey (NIS)-Child assesses vaccine coverage levels for children 19-35 months of age nationally, by state, and in selected areas. In 2015, selected areas in Texas included Bexar County, El Paso County, Hidalgo County, and the City of Houston. The 2015 report, which was released in September 2016, measures children born between January 2012 and May 2014. Measures reflect the effectiveness of strategies and activities in place up to three years ago.

The graph below shows coverage rates for children receiving the 4:3:1:3:3:1:4 combination series.³ Overall, Texas' rate was 71.2 percent, one percent below the national average of 72.2 percent. Bexar County had the lowest rate at 67.5 percent.

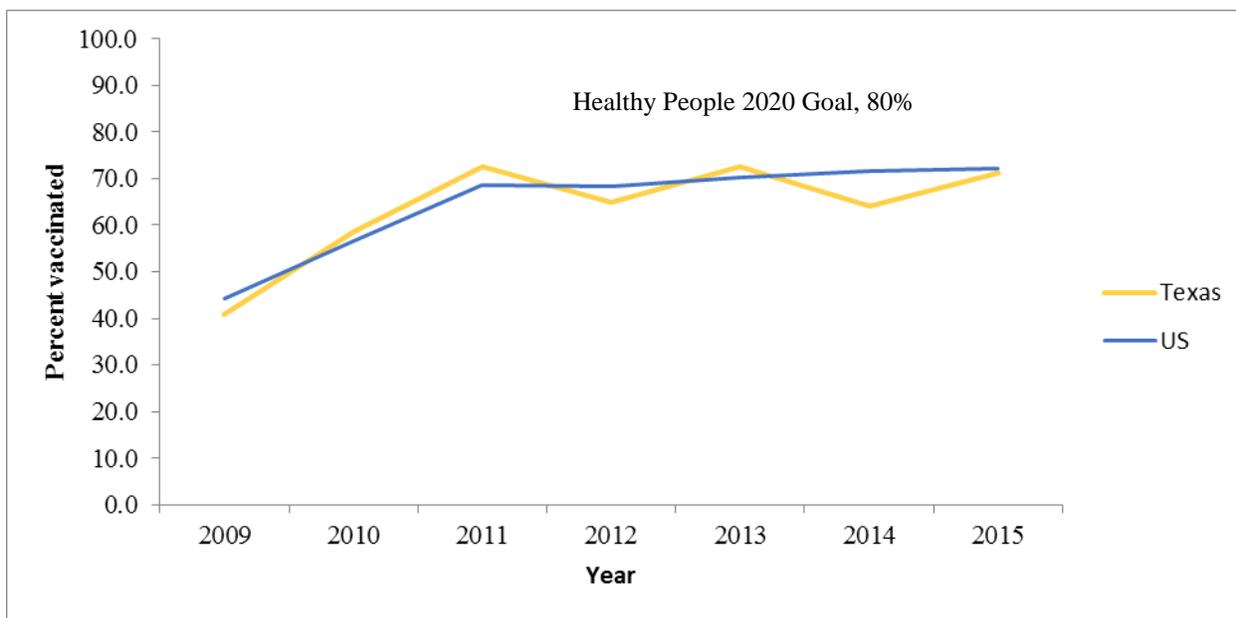
Graph 1. Texas Vaccine Coverage Levels among Children 19-35 Months of Age, National Immunization Survey, 2015.



³ The 4:3:1:3:3:1:4 vaccination combination series includes four doses of diphtheria/tetanus/pertussis vaccine, three doses of polio vaccine, one dose of measles/mumps/rubella vaccine, three or four doses of Hib vaccine, three doses of hepatitis B vaccine, one dose of varicella vaccine, and four doses of pneumococcal conjugate vaccine.

The following graph provides a historical perspective of coverage in Texas for the combination series.

Graph 2. Estimated Vaccination Coverage among Children 19-35 Months of Age, U.S. and Texas, National Immunization Survey, 2015.



The following table provides vaccine coverage levels for selected vaccines.

Table 1. Vaccine Coverage Levels among Texas Children 19-35 Months of Age by Selected Vaccines, National Immunization Survey, 2015.

Vaccine	U.S.	TX	Bexar County	El Paso County	Hidalgo County	City of Houston	Rest of State
Hepatitis A	59.6%	64.6%	64.2%	73.5%	64.1%	64.5%	64.2%
Hepatitis B	92.6%	90.7%	89.3%	90.5%	90.5%	89.2%	85.7%
Hepatitis B Birth Dose	72.4%	76.4%	67.5%	80.9%	92.0%	81.6%	77.3%
Haemophilus influenzae type	82.7%	80.4%	78.3%	83.8%	81.3%	77.7%	74.7%
Diphtheria, Tetanus, and	84.6%	82.1%	80.1%	82.8%	82.4%	80.5%	76.4%
Pneumococcal Conjugate (PCV)	84.1%	83.3%	78.9%	84.8%	85.3%	84.1%	76.9%
Varicella	91.8%	92.3%	89.4%	91.9%	90.6%	91.9%	92.7%

3+ Polio	93.7%	92.5%	92.0%	91.2%	91.9%	93.9%	89.4%
1+ Measles, Mumps, Rubella	91.9%	92.5%	89.2%	90.6%	86.9%	92.8%	93.3%
4:3:1:3:3:1:4	72.2%	71.2%	67.5%	71.6%	71.6%	70.5%	71.6%

National Immunization Survey-Teen

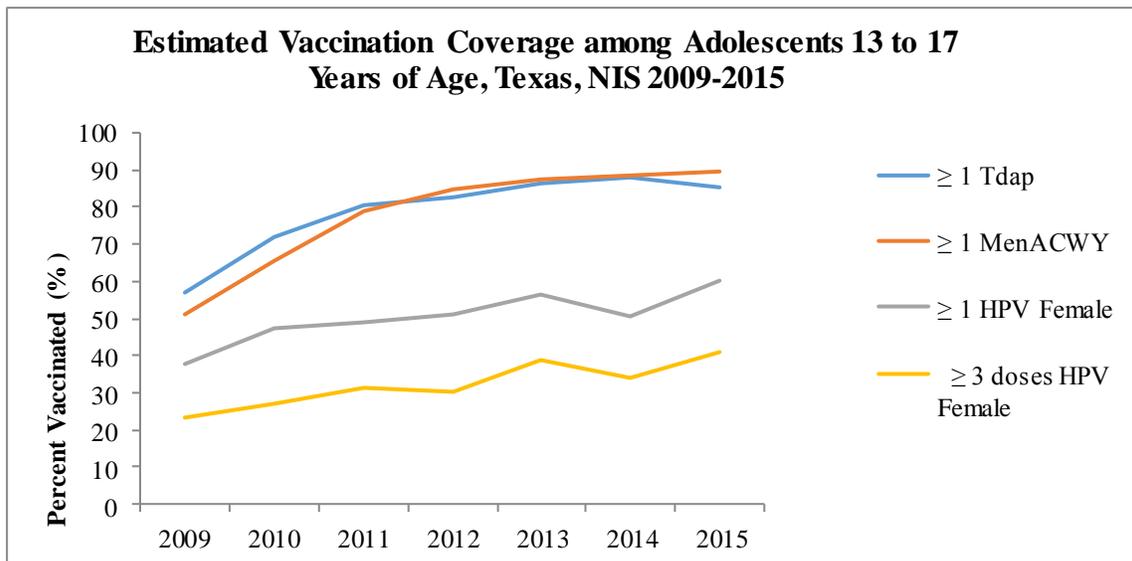
The NIS-Teen assess immunization levels for adolescents 13-17 years of age. Adolescents measured in the 2015 survey were born between January 1997 and February 2003. The table below shows national and Texas coverage rates for adolescents receiving the HPV, Tdap, and meningococcal vaccines, and compares 2014 and 2015 results.

Table 2. Vaccine Coverage Levels among Texas Adolescents 13-17 Years of age by Selected Vaccines, National Immunization Survey-Teen, 2015.

Vaccine	Texas 2014	Texas 2015	U.S. 2015
≥1 dose of tetanus-diphtheria-acellular pertussis (Tdap)	88.2%	85.1%	86.4%
≥1 dose of meningococcal conjugate (MenACWY)	88.6%	89.6%	81.3%
≥1 dose of human papillomavirus (HPV), females	50.7%	60.1%	62.8%
≥3 doses of HPV, females	33.9%	40.9%	41.9%
≥1 dose of HPV, males	36.6%	41.4%	49.8%
≥3 doses of HPV, males	17.7%	24.0%	28.1%

The following graph displays estimated vaccination coverage among Texas adolescents 13-17 years of age from 2009-15.

Graph 3. Estimated Vaccination Coverage among Adolescents 13 to 17 Years of Age, Texas, National Immunization Survey, 2015.



Approaches to Increase Immunization Rates

Texas works to identify gaps in the statewide immunization system and proactively implement changes. The Texas Immunization Stakeholder Working Group (TISWG) brings all facets of the immunization system together to dialogue about needs and successes across Texas. Input from TISWG and collaboration with other partners enables DSHS to overcome barriers and gaps. Strategic goals are as follows:

- Raise and sustain vaccine coverage levels for infants and children
- Improve adolescent vaccine coverage levels
- Improve adult vaccine coverage levels
- Prevent and reduce cases of vaccine-preventable diseases
- Maintain and improve public health preparedness
- Promote and practice the safe handling and administration of vaccines and ensure the accountability and integrity of all program components

Additionally, DSHS promotes the following proven strategies recommended by the federal Centers for Disease Control and Prevention’s (CDC) Advisory Committee on Immunization Practices (ACIP)⁴ and state leadership:

- Promote a medical home for all Texans

⁴ The Advisory Committee on Immunization Practices (ACIP) is a federally-appointed group of medical and public health experts that develops recommendations on how to use vaccines to control diseases in the United States. Additional information can be found at <http://www.cdc.gov/vaccines/acip/about.html>.

- Promote the use of ImmTrac, the statewide immunization registry and disaster preparedness tracking and reporting system
- Advance the use of reminder and recall systems
- Educate providers
- Expand public and parent education
- Encourage public and private partnerships

Addressing Needs of Underserved Areas

Children who are uninsured, underinsured, lack a medical home, live in rural areas or on the Texas-Mexico border are traditionally underserved medically. While DSHS programs emphasize the importance of a medical home, underserved areas often require additional services.

DSHS actively seeks to enroll federally qualified health centers (FQHCs) and rural health clinics as health care providers in the Texas Vaccines for Children (TVFC)⁵ and Adult Safety Net (ASN)⁶ programs. FQHCs and rural health clinics mitigate barriers to medical care by offering immunization services outside of usual clinic hours and by using reminder/recall systems to notify families of due or past-due immunizations.

Additionally, DSHS actively recruits providers in border counties. Currently, 512 private and public border-area clinic sites are enrolled in TVFC, and administer approximately 1.3 million doses of vaccine each year.

DSHS also has long-standing relationships with public health agencies in border counties. Contracts provide funding to LHDs to promote TVFC and ImmTrac, administer vaccines, promote immunizations, conduct VPD surveillance, assess vaccine coverage levels, and apply epidemiological principles for controlling outbreaks. In 2015, DSHS provided more than \$2 million in state and federal funds to the following LHDs:

- City of El Paso Department of Public Health
- City of Laredo Health Department
- Hidalgo County Health Department
- Cameron County Department of Health and Human Services

These LHDs implement immunization programs for children and adolescents 18 years and younger as well as adults, with a special emphasis on children under three, with the goals of eliminating barriers to immunizing children on schedule, expanding vaccine delivery, and establishing uniform immunization policies.

DSHS's Immunization program also works with the Children's Health Insurance Program (CHIP) to ensure that CHIP providers have access to low-cost vaccines. Through an interagency cooperative contract between the Texas Health and Human Services Commission (HHSC) and

⁵ The TVFC Program provides vaccines at no cost to physicians to vaccinate eligible children. Further information on the TVFC Program can be found at http://www.dshs.state.tx.us/immunize/tvfc/tvfc_about.shtm.

⁶ The ASN Program provides vaccines at no cost to physicians to vaccinate uninsured adults. Further information on the ASN Program can be found at <http://www.dshs.state.tx.us/asn/>.

DSHS, children receive vaccines at a lower cost to taxpayers by taking advantage of federal vaccine contract prices.

Contracts with Local Health Departments

The statewide effort to increase vaccine coverage rates is reflected by state and federal funds allocated to LHDs across Texas. For 2017, DSHS has awarded \$15.5 million in state general revenue and federal funds to 50 LHDs to provide essential immunization services. LHDs are required to implement the following activities to help increase immunization coverage levels:

- Incorporate systematic approaches designed to eliminate barriers and expand immunization delivery, including: partnerships, registry, reminder/recall, provider and public education, and the use of the medical home
- Establish and maintain partnerships with community-based organizations and local human service agencies to promote best practices and activities that will increase vaccination coverage levels
- Implement an immunization program for children, adolescents, and adults, with special emphasis on accelerating interventions to improve vaccine coverage levels of children less than 36 months
- Use practices that encourage parents to use the medical home for vaccinations.
- Inform and educate the public about vaccines and vaccine-preventable diseases
- Recruit and enroll providers into the TVFC program and perform follow-up visits when deficiencies are identified by the quality assurance contractor
- Conduct immunization assessments or surveys in child-care facilities and registered family homes
- Complete annual assessments in sub-contracted entities and clinics
- Ensure a health care workforce that is knowledgeable about vaccines, vaccine-preventable diseases, and delivery of vaccination services
- Promote ImmTrac use in public clinics and private provider offices to increase the number of children, adolescents, and adults participating in the registry
- Make use of reminder/recall systems to notify parents or guardians of children younger than 36 months when immunizations are due or past-due
- Refer children to Medicaid and/or CHIP and assist families to identify medical homes by providing necessary resources
- Report all vaccine adverse event occurrences in accordance with the National Childhood Vaccine Injury Act of 1986
- Investigate all reported vaccine-preventable diseases
- Provide immunization services and ACIP-recommended vaccines in LHD clinics to children, adolescents, and adults to maximize vaccine-coverage levels within each LHD's jurisdiction

To ensure that contracted LHDs use proven national strategies, a standardized work plan⁷ is in place. In addition, the LHDs are provided with a current Contractor's Guide⁸, which explains the

⁷ The FY 2016 ILA Immunization Contract work plan can be found at:
<http://www.dshs.texas.gov/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=8590002482>.

⁸ The SFY 2016 DSHS Immunization Contractors Guide For Local Health Departments can be found at:
<http://www.dshs.texas.gov/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=8590002481>.

requirements, and offers best practices to incorporate nationally proven strategies. DSHS Health Service Region (HSR) immunization program managers provide training to LHD staff on each of these contractual pieces. In areas of the state where no LHD exists, HSRs perform similar functions.

Each LHD is on a monitoring schedule requiring an on-site evaluation by HSRs and contract management staff every two years. Findings from the on-site review prompt the creation of corrective action plans when necessary.

Conscientious Exemptions

Starting September 1, 2003, an exemption from vaccine requirements for entry to a school or child-care facility due to reasons of conscience, including religious beliefs, went into effect per Texas Health and Safety Code, Section 161.0041. The conscientious exemption allows the following:

- Parents or guardians may request a conscientious exemption affidavit form in writing or via the DSHS website.
- Parents or guardians can request up to five conscientious exemption affidavit forms per child.
- Requests for conscientious exemption affidavit forms are submitted to DSHS. Once the request has been processed, DSHS returns the original request and the conscientious exemption affidavit forms to parents or guardians by mail.
- After the original conscientious exemption affidavit form is signed and notarized, it must be submitted to the child's school or child-care facility.
- Each individual conscientious exemption affidavit is valid for two years from the date notarized.

DSHS is required to report to the Legislature annually the number of requests for conscientious exemptions. DSHS gathers data by tracking the number of affidavit forms requested, and the number of conscientious exemptions reported by school. DSHS monitors compliance with immunization requirements via the *Texas Annual Report of Immunization Status*, as mandated by the Texas Education Code, Section 38.002. All accredited elementary and secondary schools in Texas, public and private, must submit an annual report of immunization status to DSHS.

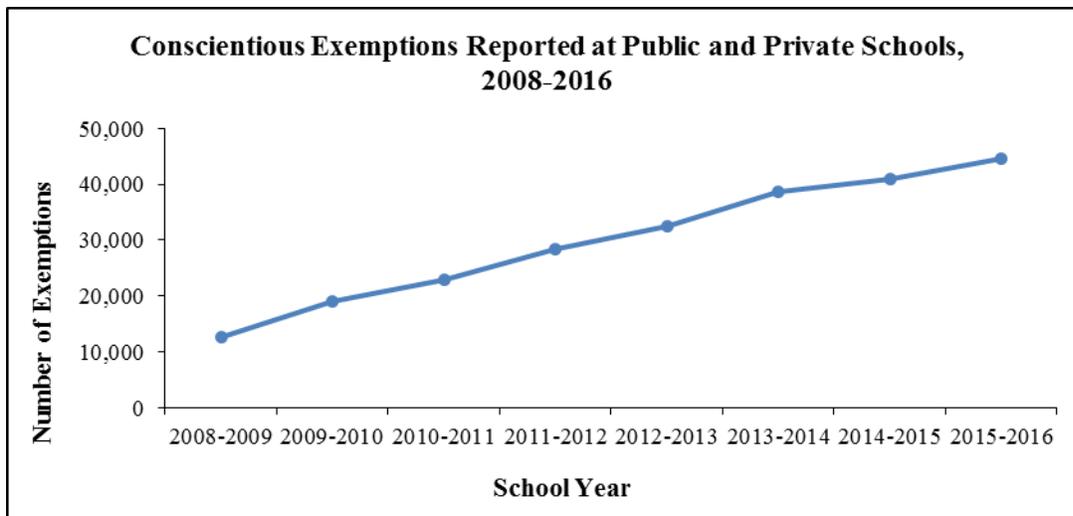
Data are self-reported and provide an aggregate number of conscientious exemptions. No reports of discrimination for obtaining an exemption have been reported since 2004. The table below shows the number of affidavits mailed, the number of requests received, and the number of individuals for whom forms were requested.

Table 3. Data on Requests Received for Conscientious Exemptions

	FY 2012	FY 2013	FY 2014	FY 2015
Data Collected	(09/01/11-08/31/12)	(09/01/12 – 08/31/13)	(09/01/13 – 08/31/14)	(09/01/14 – 08/31/15)
Number of Affidavits Mailed	60,034	105,015	113,959	119,505
Number of Request Letters Received (may list more than one child)	20,675	29,037	29,888	30,048
Number of Individuals	27,682	44,291	46,795	48,472
Number of meningococcal exemptions processed through the web portal for public junior and community college students	N/A	N/A	46,906 ⁹	57,192 ¹⁰

The following graph shows the number of conscientious exemptions filed at public and private schools for kindergarten through 12th grade since 2008.

Graph 5. Number of Conscientious Exemptions filed at Public and Private Schools, 2008-16



Based on information in the *Texas Annual Report of Immunization Status*, the number and percentage of children who have a conscientious exemption has increased every year since

⁹ The number of exemptions reported differs from that reported in the *Report on Internet-based Meningococcal Exemption Request for Public Junior and Community Colleges* as it includes exemptions processed during the entire fiscal year.

exemptions were allowed in 2003. In the 2015-16 school year, the percent of students with a conscientious exemption on file was 0.84 percent.

ImmTrac – Texas Statewide Immunization Registry

Texas Health and Safety Code, Section 161.007, requires DSHS to maintain an immunization registry as a single repository of accurate, complete, and current immunization records. The state registry, called ImmTrac, helps Texans stay up-to-date on their vaccinations, improves information available to providers and parents, and helps DSHS prevent and control the spread of disease.

ImmTrac consolidates and stores a client's immunization records electronically in a secure, central system. It is a critical component to state health information for both immunization and disaster preparedness and planning. More than 10,500 medical providers in Texas actively use ImmTrac to assess vaccination coverage among their client populations. ImmTrac currently stores more than 138 million immunization records for nearly 8 million adults and children.

The rules governing ImmTrac provide a formal complaint process for failure by DSHS to comply with requests for exclusion from the registry, and require DSHS to report incidents of discrimination resulting from exclusion requests. In 2014 and 2015, DSHS did not receive any complaints for failure to remove an individual's information from the registry or any reports of incidents of discrimination from an individual requesting exclusion from the registry.

DSHS has identified the following methods to increase provider participation in ImmTrac:

- Improve registry value and benefits to providers and payors
- Increase registry marketing, promotion, and education efforts
- Strengthen registry customer support
- Continue with interoperability sustainability for Health Level 7¹⁰ (HL7) immunization electronic data acceptance from registered providers
- Collaborate with electronic health record (EHR) vendors to increase interoperability
- Employ a medical home model in order to improve clinical usability of the system
- Implement recognition programs
- Apply technical improvements

To maintain participation among graduating seniors, DSHS will continue working with the Texas Education Agency and high school nurses to secure consent from students into adulthood, and will work with higher education entities to increase adult participation in the system.

Finally, DSHS is implementing an ImmTrac replacement project with federal funding, the purpose of which is to modernize the system and incorporate the vaccine inventory system for TVFC into a single system. The expectation is that the new system will encourage more

¹⁰ Health Level Seven International (HL7) is a not-for-profit organization dedicated to providing a comprehensive framework and standards for the exchange, integration, sharing, and retrieval of electronic health information (<http://www.hl7.org/about/index.cfm?ref=common>).

providers to participate in both TVFC and ImmTrac. Other anticipated outcomes of the replacement project include:

- Savings on system costs and maintenance
- Compliance with recommendations and guidelines of the American Immunization Registry Association and the CDC
- Compliance with the HL7 standards for data exchange adopted by the CDC to enable secure immunization data transfer with EHR systems
- Alignment with Texas' Health Information Technology plans for statewide health information exchange
- Completeness and consolidation of data, allowing for more comprehensive preventive healthcare
- Enhanced reminder/recall functionality, and client connection with a medical/school home
- Provision of reliable immunization data during times of disaster

Conclusion

Stakeholders and policy makers have made childhood immunizations a priority in Texas. DSHS has incorporated proven strategies in a comprehensive, collaborative approach with local and state partners to increase vaccine coverage levels. This systematic approach is designed to eliminate impediments to vaccination and maximize resources available to the immunization delivery system. Going forward, DSHS will continue to evaluate the effectiveness of existing public health strategies, and work to implement policies that increase coverage levels and thus decrease disease in Texas.