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A Dose of Reality:
Texans Stand Up for Immunizations

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THE IMMUNIZATION PARTNERSHIP

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Above all else, we wish to acknowledge the generous support of St. David's Foundation. Without their guidance and enthusiasm, this project would not be possible. We are very grateful for their investment in the health of Texans.

LETTER FROM THE CEO

Greetings from The Immunization Partnership,

On behalf of the Board of Directors and staff of The Immunization Partnership, I would like to express our sincere appreciation to our donors, stakeholders and individuals who made this publication possible. We hope that this document is useful and enlightening. Preparing for this publication, The Immunization Partnership engaged stakeholders across the spectrum of immunization delivery. Our visits included registrars, families, front line immunizers, representatives of the legislature and public health advocates, who were all eager to share their successes and challenges. No matter where we went, the conversation was lively. Never has it been more evident—Texans are passionate about protecting against vaccine-preventable diseases.

The issues that are important to immunization stakeholders are outlined in this publication. Access to immunization information, funding for adult immunization, stemming the tide of exemptions and changes due to health care reform are all topics that matter to the stakeholders in the state. We hope that this publication provides guidance to the policy makers and immunization community, enabling all the stakeholders to continue to advocate for systems that will support high immunization rates in Texas. No doubt, the future holds challenges and uncertainty. But with the passion and dedication demonstrated by the folks we met along the way, I am confident that we can overcome the barriers and continue to foster a prosperous state to work and live that makes Texas legendary.

The Immunization Partnership is honored and humbled by the immense support and enthusiasm shown by the community. From legislators to school nurses, from public health officials to foundations, from medical societies to immunization coalitions, Texas has demonstrated a truly inspirational dedication to our common cause: preventing what's preventable. Thank you for the work that you do each day to create a healthy community. Working together, we can realize our vision of a community free from vaccine-preventable diseases.

Sincerely,

Anna C. Dragsbaek, J.D.
President & CEO
The Immunization Partnership

ABOUT US

The Immunization Partnership

The mission of The Immunization Partnership (TIP) is to eradicate vaccine-preventable diseases by educating the community, advocating evidence-based public policy, and promoting immunization best practices. Our vision is a community free from vaccine-preventable diseases. All of our projects and programs are developed in concert with achieving the organization's mission. To achieve and sustain high immunization rates, TIP has three focus areas: education, advocacy, and the support of immunization best practices. Together, these three areas address both the root causes of low immunization rates and the far-reaching policy issues that impact immunization rates in Texas. For more information, please visit www.immunizeUSA.org.

St. David's Foundation

St. David's Foundation invests in a healthy community through funding, hard work, and initiatives to better care for the underserved and uninsured. As a joint owner of St. David's HealthCare, the Foundation achieves its goals by investing the proceeds from the hospitals back into the Central Texas community. From its beginning in 1924, St. David's HealthCare has now grown to include seven hospitals, four surgery centers, four urgent care clinics, and three free-standing emergency departments reaching from Georgetown to Kyle.

Each year the Foundation directly gives millions to the community through grants in six key areas to numerous agencies, local safety net clinics and the highly acclaimed St. David's Dental Program. The Foundation also provides funding in the area of public policy through the St. David's Foundation Impact Fund, with the goal of informing policies that will improve health and healthcare in our community.

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SUMMARY OF RECOMMENDATIONS

In 2012, The Immunization Partnership engaged Texas immunization stakeholders in statewide meetings and a web-based survey, the purpose of which was to empower participants to effectively advocate on behalf of positive policy change. Other objectives included discussing immunization topics on the national and state front and identifying immunization challenges. Approximately 169 Texans participated in the meetings, and 217 completed the survey. The stakeholder meetings and survey culminate in the Texas Immunization Summit 2012 in Houston, Texas.

Several key recommendations arose from the stakeholder discussions and survey responses:

1. Restore funding for immunizations and safety net programs.

2. Enhance the state immunization registry, ImmTrac, with specific features related to consent, data sharing, reporting, data quality, vaccine management, and user-functionality/user-friendliness.

3. Provide outreach and education to people who are vaccine hesitant.

4. Reduce the number of vaccine exemptions that are claimed due to reasons of conscience through education and advocacy-based activities.

5. Improve immunization uptake among childcare providers through education and facility-based vaccination policies.

6. Decrease incidence of meningitis by improving access to the meningitis vaccine for college students.

7. Promote strategies to reduce pertussis (whooping cough) incidence.

BACKGROUND AND PURPOSE

Immunization Rates in Texas

It's a fact – millions of lives have been saved as a result of immunizations. Across the nation, rates of immunizations continue to rise. Increased access coupled with improved awareness has led to a reduction in the incidence rates of vaccine-preventable diseases. The advent of new vaccines and technologies has thwarted diseases that once took lives.

Texas has played its part. In recent years, Texas has consistently ranked in the top 25 states for childhood immunization rates, maintaining a coverage level of at least 70%. In 2011, 76% of 19 to 35 month-old children completed the 4:3:1:3:3:1 series (4 DTaP, 3 IPV, 1 MMR, 3 Hib, 3 Hep B, 1 Varicella) of immunizations, holding steady when compared to the 2010 (75%), 2009 (77%), and 2008 (78%) rates. Over the past decade, the number of cases of hepatitis A and B has decreased significantly. In 1998, 3,537 cases of hepatitis A were reported as opposed to 184 cases in 2009.[1] Likewise, 1,960 cases of hepatitis B were reported in 1998 as opposed to 420 cases in 2009.[2] Texas' varicella incidence dropped dramatically in 1999 and has continued to decline. In 2011, there were 2,558 cases of varicella in the state.[3]

Despite the progress made, significant challenges remain. As Dr. David Lakey, Commissioner of Texas Department of State Health Services (DSHS) said, it takes "*continued effort to see continued improvement.*"[4] The number of parents seeking conscientious exemptions for their children has increased every year since non-medical exemptions were first allowed in 2003. Texas leads the nation in the number of uninsured and underinsured, and programs must be expanded to meet these populations. ImmTrac, the Texas immunization registry is not being optimally utilized, and provider participation can be improved. Finally, as new vaccines or requirements are instituted, funding will be needed to ensure that vaccines can be made available to those who need them.

Legislative Reforms (2009 - 2011)

In 2009, The Immunization Partnership and collaborative partners supported the following legislation, which promotes critical vaccinations in vulnerable populations and enhances our state's vaccine delivery system.

- SB 346 by Chairwoman Jane Nelson (R – Flower Mound): Adults may now enter their immunization information into the state immunization registry, ImmTrac.

- SB 347 by Chairwoman Jane Nelson (R – Flower Mound): Allows Texas to share immunization information with other states if there is an emergency in Texas that forces Texans to surrounding states.

- HB 4189 by Chairman Patrick Rose (D – Dripping Springs): (a.k.a. the Jamie Schanbaum Act) Effective January 2010, any college student entering a dormitory for the first time must have the meningitis vaccine.

The Partnership also successfully advocated for a revision to the school immunization requirements in Texas. The rule now ensures that all students entering 7th grade be immunized with one dose of meningococcal vaccine, a booster dose of Tdap (tetanus-diphtheria-acellular pertussis), and two doses of varicella (chickenpox) vaccine.

In 2011, legislative reforms included:

- SB 1107 by Sen. Wendy Davis (D – Ft. Worth) and Rep. Charlie Howard (R – Pearland): (a.k.a. The Jamie Schanbaum and Nicolis Williams Act) Requires all college students under age 30 to be vaccinated against meningitis prior to school entry.

- HB 3336 by Rep. Garnet Coleman (D – Houston) and Sen. Bob Deuell (R – Greenville): Parents of newborn children will receive information about the dangers of pertussis and about the importance of vaccinations against pertussis for anyone coming into contact with newborn children.

- SB7 by Sen. Jane Nelson (R – Flower Mound) and Rep. John Zerwas (R – Simonton): This omnibus bill ensures that all Texas healthcare facilities have a policy in place regarding healthcare worker vaccination.

Stakeholder Meetings

Four stakeholder meetings took place between May and July 2012. The meetings were held in Austin, Fort Worth, Houston, and San Antonio (Figure 1).

Figure 1. Location of Immunization Stakeholder Meetings 2012

Approximately 169 people participated in the meetings (Figure 2). Meeting participants included parents, healthcare providers, state agency personnel and representatives from hospitals, foundations, medical associations, insurance companies, health clinics, pharmaceutical companies, state legislative offices, local public health authorities, school districts, and non-profit organizations.

Figure 2. Number of Participants, Stakeholder Meetings, Texas, 2012	
Houston	73
San Antonio	37
Austin	32
Fort Worth	27
Total	**169**

The objectives of the 2012 stakeholder meetings were to: 1) review immunization topics on the national and state front, 2) discuss immunization challenges, and 3) share advocacy strategies and techniques with participants.

The feedback from the meetings was overwhelmingly positive. Virtually all of the participants believed the meetings increased their understanding of several key topics and provided them with important resources (Figure 3).

Figure 3. Percentage of Stakeholders who "Agreed" or "Strongly Agreed" with Statement, Immunization Stakeholder Meetings, Texas 2012	
I was given the opportunity to raise questions and voice concerns.	99%
The policy issues discussed were key issues of importance.	99%
The issues raised during the stakeholder meeting were thoroughly addressed.	98%
Meeting increased my understanding of how I can be personally involved in advocacy efforts.	96%
Meeting increased my understanding of national and state policy issues.	95%
Meeting increased my access to immunization and vaccine information.	94%
Meeting increased my professional network of contacts.	93%
Meeting increased my understanding of the ways that I can mobilize groups in my community.	92%
Discussion informed my understanding of health care reform and its impact on immunizations.	92%
Presentation improved my understanding of national and state funding structures.	91%
Meeting increased my understanding of how I can leverage the media to promote immunizations.	84%

Web-Based Survey

The Immunization Partnership administered a web-based survey to stakeholders in July 2012, the purpose of which was to learn about local concerns related to the provision of vaccines and immunization policy. Survey findings also helped The Immunization Partnership identify and prioritize enhancements to the state immunization registry, ImmTrac.

Approximately 217 immunization stakeholders completed the survey. Respondents came from 46 towns and cities across Texas. Of respondents, 37% attended at least one of the stakeholder meetings. Respondents included Immunization Information System users, healthcare providers, state agency personnel, and representatives from hospitals, foundations, medical associations, local public health authorities, and non-profit organizations.

The survey addressed these topics: barriers to increasing immunization rates in Texas, potential enhancements to the state immunization registry, meningitis and human papilloma virus (HPV) vaccines, immunization funding, level of support for potential legislation, and the documentation of immunizations. Respondents were asked for suggestions on how to increase immunization rates in Texas and to prioritize issues. They also had the opportunity to raise additional concerns and ideas.

STAKEHOLDERS' PRIORITIES

I. Restore Funding for Immunizations and Safety Net Programs

Background

In Texas, there are several funding streams that help pay for immunizations. Federal funds are a combination of Vaccines for Children (VFC) and Section 317 program funds. The VFC program is an entitlement program that distributes ACIP-recommended vaccines at low cost to VFC-eligible children. Children through 18 years of age who meet at least one of the following criteria are eligible for VFC vaccine: 1) Medicaid eligible, 2) uninsured, 3) American Indian or Alaska Native, or 4) underinsured. A child is characterized as "underinsured" if he/she has private insurance but the coverage does not include vaccines, the insurance covers only selected vaccines, or the insurance caps vaccine coverage at a certain amount. Underinsured children are eligible to receive VFC vaccine through a Federally Qualified Health Center (FQHC) or Rural Health Center (RHC) only.

The Section 317 program is a discretionary federal grant program that provides vaccines to underinsured children and adolescents not served by the VFC program and, as funding permits, to uninsured and underinsured adults. Texas also supplements immunization programs through general revenue and the Children's Health Insurance Program (CHIP). Together, these funding streams provide immunizations for millions of Texans, including 3.3 million children.[5] Of those 3.3 million children, 61% have Medicaid, 34% have no insurance, 3% are American Indian or Alaska Native, and an estimated 2% are underinsured.

Through December of 2011, the Texas Vaccines for Children (TVFC) program had broad criteria to define qualified individuals. TVFC covered the following: 1) underinsured individuals unable to pay their co-payments or deductibles, 2) privately insured children who accessed public VFC sites, 3) CHIP enrollees, 4) underinsured individuals *not* seen in a FQHC/RHC, and 5) children who were TVFC eligible and received vaccines before their 19th birthday, but did not complete the series before turning 19. These groups of individuals were covered using a combination of state and federal funds.

The Center for Disease Control and Prevention (CDC) estimates that greater than one million children in Texas between zero and 18 years are underinsured and served outside a FQHC/RHC. It is estimated that $20-$66 million of federal 317 and state (general revenue) funds are required to serve these children in non-VFC sites. However, currently only $11-13 million are available.[6]

The rising costs of some vaccines, reduced state and federal funding, and increased federal scrutiny for publicly-funded vaccines has required many states, like Texas, to make vaccine policy changes. Effective January 1, 2012, DSHS made changes to the Texas Vaccines for Children (TVFC) and Adult Vaccine Safety Net (ASN) programs. Privately insured children are no longer eligible to receive vaccines at public health clinics, but instead will be referred to

their medical home for immunizations. In some cases, the local health department may be the medical home for preventive care services and in those cases, private insurance will be accepted. In addition, Texas has adopted the federal criteria for "underinsured". Underinsured children will be directed to receive care from their medical home, FQHC, or RHC. In response, Texas is implementing a deputization process, whereby a FQHC/RHC authorizes or "delegates authority" to public health clinics to serve underinsured children on their behalf. Prior to the January 2012 changes, many underinsured Texas children were already being served at public health clinics. This process will allow those children to maintain their medical homes and ensure that children have access to immunizations in their communities.

To reduce costs further, DSHS also scaled back its Adult Vaccine Safety Net program. This program was originally developed to provide vaccines to uninsured and underinsured adults at participating ASN program sites. As of January, the vaccines will only be available for uninsured individuals who are 19 years of age or older and will be based upon available funding. The vaccines that will continue to be offered include hepatitis B, MMR (measles-mumps-rubella), Td (tetanus-diphtheria), and Tdap (tetanus-diphtheria-pertussis). The vaccines that will no longer be available under the ASN program include HPV (human papillomavirus vaccine), MCV4 (meningococcal conjugate vaccine), and Zoster. Pneumococcal vaccine will be offered on a limited basis in some clinics, and hepatitis A and varicella will be available in emergency situations.

Nationally, the scope of immunizations will change with the implementation of the Patient Protection and Affordable Care Act (PPACA). Several provisions in the PPACA provide opportunities to increase access to immunizations by improving insurance coverage and affordability, increasing funding for programs that provide immunization services, and expanding the national investment in prevention, wellness and primary health care.[7] Included in the PPACA are the following measures: 1) new health insurance plans must provide coverage for ACIP-recommended vaccines without deductibles or co-payments when administered by a participating provider, 2) states will be allowed to purchase adult vaccines from federally-negotiated contracts, using state funds, and 3) funding will be continued under Section 317, which makes federally purchased vaccines and grants available to all states and helps provide immunization services to priority populations.[8]

Although some uncertainties surrounding the PPACA remain, with full implementation expected over the next several years, it is estimated that the number of underinsured will be reduced by 70%.[9]

What Stakeholders Say

Texas Vaccines for Children (TVFC) Program

When asked how recent changes to the Texas Vaccine for Children program have affected their clinics or patients, survey respondents shared concerns related to the impact on clinic efficiency and viability, quality of care, vaccine access, and availability. Others voiced support for the new policies.

Stakeholders expressed concern that public health clinics are experiencing a decline in the number of patients being served, as a result of the policy change. Some speculated that the decline in patient volume will lead to clinic closures. Several questioned the ability of local public health clinics to continue to serve as a primary souce of vaccine information and administration amidst the TVFC program changes. A TVFC Coordinator quoted, "*We turn away approximately 80-100 clients/month due to the eligibility changes. Many people regard us as the experts in immunizations and prefer to receive their vaccines from us.*" Finally, some stakeholders expressed frustration about having a stockpile of VFC vaccine with a short shelf life that cannot be used to vaccinate children who are newly ineligible per the revised guidelines. A director of a health department explained:

> *"Now we are discriminating against those who have insurance, [rather than considering who has the ability] or inability to pay. This has resulted in us losing 25% of our program income for all immunizations, and I am confident that it will lead to a significant decrease in immunization rates in our area, as well as across the state. The local health departments give vaccines well and give them quick. People simply won't get their shots if they have to go somewhere else and wait for a long time, or be seen for a physical. This policy will lead to the closure of several small local health departments."*

"Many parents say their primary care providers don't carry the vaccines and they can't afford to pay the private vaccine prices. So, I don't know if they are finding physicians who do carry the vaccines or if they are just delaying getting vaccinated."

- Stakeholder, Wichita Falls

Many providers voiced that patients are having difficulty accessing immunizations. Some patients cannot afford the cost of vaccines due to high deductibles and co-payments. Others are unable to locate vaccines because private providers are not stocking them. Patients in rural communities or small counties face significant challenges in locating immunization providers, because they no longer qualify for services at public health clinics that have traditionally served as a convenient source of care. Many of these families are being forced to drive long distances to access private providers and establish care. One stakeholder indicated that the "*closest RHC is 60-90 miles away.*" The inconvenience of traveling for care may be leading some families to delay or forego vaccination entirely.

"We have experienced a bit of confusion from the changes and are doing the best we can. We sometimes get conflicting answers when searching for a correct answer."

- Registered Nurse, private practice, Houston

Finally, stakeholders observed the policy changes to be administratively challenging. Some felt that the communication provided by DSHS was unclear, making implementation difficult. Others found the eligibility and screening process to be laborious. A private provider in Houston "*stopped participating in VFC because it is too burdensome to operationalize.*" Several voiced concerns about the added time and resources required to institute the policy.

"The new, more restrictive eligibility requirements have increased staff time necessary to screen patients and especially to explain to former patients why we can't serve them anymore."

- Employee, public health department

Conversely, some survey respondents noted the positive aspects of the policy and appreciated its intent. For example, a stakeholder from Missouri City said, "*It is my opinion that children who do have insurance should see their pediatrician for their vaccines. That enables us to provide for those who are not covered by a health plan.*" A survey respondent from Austin quoted, "*I think it's good to keep the TVFC for the folks it is intended for. Insured clients will be more able each year to access their vaccines without co-pays.*"

Adult Vaccine Safety Net (ASN) Program

Like changes to the TVFC program, cuts to the ASN program have had tremendous impact on vaccine access and availability, particularly for the underinsured, those who live in rural communities, or individuals who need vaccinations for school.

> "*Health Science applicants are having a difficult time trying to find low cost vaccines, and financial aid doesn't pay for them. It is not only for the meningococcal vaccine. Hepatitis is one of the more expensive vaccines since they need to complete the three shot series." ~Employee, Community College, Houston*

> *"We live in a very rural area of south Texas. Adults are not receiving the vaccinations they need because of the distance they have to drive to receive them. In addition, the new insurance guidelines have prevented people from getting vaccinated because they cannot afford to pay for [the vaccines]." ~Employee, public health department*

Survey respondents also communicated concerns about the implication of the cuts on disease transmission, coverage rates, and overall quality of care.

> *"Most adults we hear from say that they will just give up on fighting or chasing their insurance company. Many tell us that they will not bother with immunizations anymore. This is especially true of our minority and high-risk populations." ~Director, public health department*

"I work with patients with hepatitis A, and it is unsettling to know that we cannot vaccinate their contacts to prevent further transmission."

- Director, public health department

Finally, participants expressed confusion about eligibility requirements, specifically for those covered under the Medical Access Program (MAP). According to stakeholders, there have been discrepancies in how the state interpreted the insurance status for MAP enrollees; at one point they were considered uninsured, though later the state made the determination that they are insured.

Recommendations

1. **Improve communication between state and local government regarding vaccine policy changes**. Ensure providers have clear and accurate information regarding TVFC eligibility and insurance requirements.

2. Share best practice strategies on how to screen patients based on the new eligibility criteria for the TVFC program. VFC providers are required to screen every child for VFC eligibility. However, a patient who self-declares as uninsured or American Indian/ Alaska Native requires no additional proof, and providers are not required to verify the patient's eligibility declaration. In Texas, some providers are using screening tools to help streamline the process and ensure that VFC vaccines are administered to TVFC-eligible children only.

3. Encourage parents to establish a "medical home" for themselves and their children. Texas leads the nation in the number of uninsured and underinsured, many of whom are not fully immunized. Studies show that children who have a medical home have a rate of immunization similar to children with private insurance; however, there are many children who qualify for VFC but do not have a medical home. Once a child's eligibility for has been determined, directing them to a facility that can serve as their medical home will ensure they have access to needed immunizations. The medical home is the best method for maintaining a child's medical and immunization records.[10]

4. Increase provider participation in the TVFC program. When survey participants were asked about barriers to immunization, 77% felt that lack of provider participation in the TVFC Program, is a "somewhat" or "very" important barrier. Currently, over 6,500 providers are enrolled in the TVFC program, but many others do not participate. Potential providers should be educated about the benefits of the program for both providers and patients. For instance, (1) providers receive vaccine at no-cost, thus eliminating the financial constraints of purchasing vaccine, (2) uninsured patients can be served in-house and do not need to be referred out for vaccination, and (3) patients are able to establish a "medical home" with a TVFC provider and receive routine preventive care.

5. Expand FQHC and RHC designations to improve access for the underinsured. Establish delegation of authority agreements with FQHCs and RHCs to increase the number of sites where VFC vaccines are available and to improve access to immunizations for underinsured children.

6. Communicate procedures for redistributing VFC vaccine prior to the expiration date. As a result of the TVFC policy changes, some clinics have short-dated vaccines that cannot be used for non-VFC eligible patients. With approval and guidance from DSHS, this vaccine can be redistributed to other VFC providers before they expire.

7. Reinstate funding for the Adult Vaccine Safety Net Program. Lack of insurance coverage is one of the many reasons that adults forego vaccination.[11] According to survey respondents, 81% believe that lack of healthcare coverage for vaccines among patients is a

"somewhat" or "very" important barrier to immunization. It is critical to expand safety net funding to subsidize vaccine costs for adults and students who are uninsured and underinsured.

II. Optimize Texas' Immunization Registry through Defined Enhancements

Background

An important element of Immunization Information Systems (IIS) is interoperability with Electronic Health Records/Electronic Medical Records (EHR/EMR). With the implementation of the federal Health Information Technology for Economic and Clinical Health (HITECH) Act, which provides financial incentives to professionals and hospitals that make "meaningful use" of EHR/EMR, the demand for EHR/EMR has risen dramatically. Since June 2012, over 18,000 eligible Texas professionals and hospitals have registered for the Medicaid and Medicare EHR/EMR incentive program. According to the Centers for Medicare and Medicaid Services, Texas is one of the top three states with active registrations. Of all states, Texas has received the most incentive money with over $500 million in Medicare and Medicaid payments made as of June 2012.[12]

Included in the criteria for "meaningful use" is the requirement that EHR/EMR electronically record, retrieve, and transmit immunization information to immunization registries.[13] Currently operational in 46 states, IIS aid, coordinate, and promote cost-effective disease prevention efforts. By two years of age, more than 20% of children in the United States (US) have seen more than one healthcare provider. This can result in multiple medical records being created and inaccurate and incomplete immunization histories. IIS help manage data efficiently by creating a connection between providers and monitoring immunizations that have been given or are still needed. IIS also help save money by ensuring that individuals get only the vaccines they need and improve office efficiency by reducing the time needed to gather and review immunization records.[14] Providers of immunizations in Texas use ImmTrac, the immunization registry developed by DSHS. Some counties use locally based IIS, including San Antonio and Tarrant County. Providers also use TWICES (Texas-Wide Integrated Client Encounter System), which maintains immunization history data for children served by public and private clinics.

Texas is currently working with healthcare entities to determine the capability of their electronic systems to submit data to ImmTrac. Recently, ImmTrac was enhanced to accept batch files of HL7 formatted messages from healthcare providers (HL7 is the national level data standard for the exchange of health information). DSHS also began a replacement project, where it will move ImmTrac to a WIR (Wisconsin Immunization Registry) Open-Source model. This model will allow Texas to be a member of a consortium of 19 other

states that use this type of registry.

Although several enhancements will be implemented through the replacement project, some barriers remain. A primary barrier affecting the use of ImmTrac is the manner in which patient consent is obtained. Texas is one of a handful of states that uses an "opt-in" process, which requires an individual's consent for their immunization records to be included in the registry. Most states use an "opt-out" process, meaning that an individual's immunization information is automatically included in the registry unless they request that it be excluded. Studies show that, when approached, 95% of people choose to "opt-in" to the system.[15] However, in Texas, consent must be gathered and verified on all individuals, which is an expensive process. The annual costs of the current "opt-in" system are more than $1.3 million, as compared to $100,714 for a proposed "opt-out" system. Each child in an "opt-out" system costs 29 cents, approximately one-tenth of the current "opt-in" cost of $2.24 per child to consent all newborns and children in clinical settings.[16]

"Because of the opt-in process, some children get vaccinated more than once when it is not necessary."

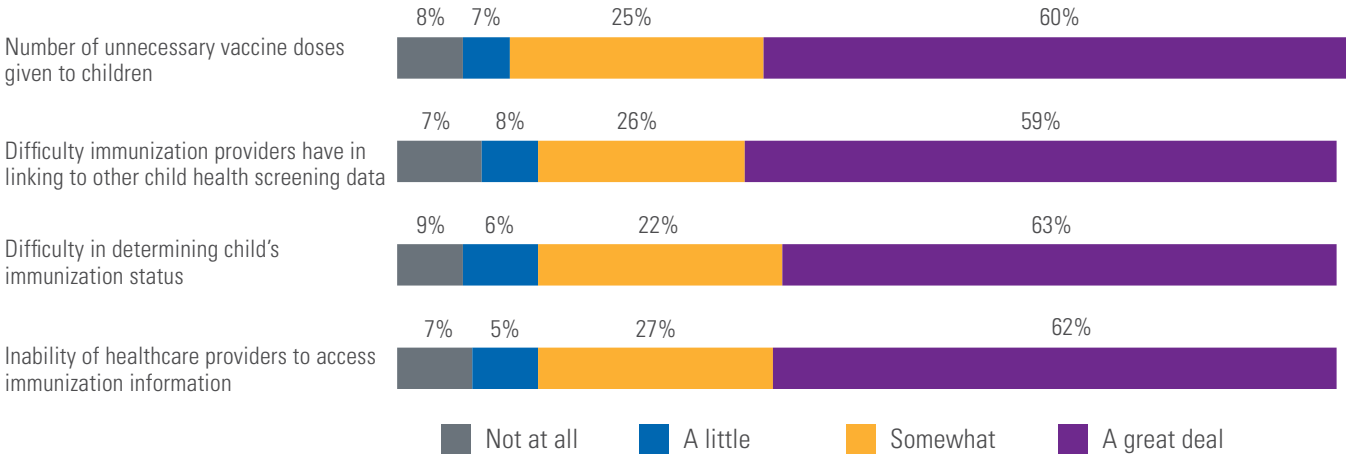
- Stakeholder, Crystal City

What Stakeholders Say

Obtaining Consent

In addition to being expensive, a great majority (93%) of immunization stakeholders who took the survey believe that the current "opt-in" process hinders the ability of healthcare providers to access immunization information and provide quality care (Figure 4). Over 90% feel that "opt-in" makes it difficult to determine a child's immunization status and for immunization providers to link to other child health screening data. Majority of respondents also indicate that the "opt-in" process contributes to the number of unnecessary vaccine doses given to children. Empirical evidence shows that one in five US children had received at least one extra vaccine dose by age 19-35 months. Annual US costs associated with extra-immunization were conservatively estimated to be $26.5 million.[17]

Figure 4. Extent to which Current Process of Obtaining Consent for ImmTrac Contributes to the Following Issues, 2012



Immunization stakeholders in Texas support moving to an "opt-out" system. Many feel that the current "opt-in" system increases paperwork, is costly, and is an unnecessary use of staff-time and resources. As a result of the administrative burden, stakeholders feel that physicians are less likely to participate. A physician in Corpus Christi put it bluntly, "*Too time consuming, no benefit. Needs to be opt-out.*" Others communicated the importance of moving to an "opt-out" system to accommodate the increasing demand of EHR/EMR and the needed interoperability between immunization registries and other health information systems.

Electronic Data Sharing

When asked to prioritize enhancements to the state immunization registry, survey respondents prioritized the electronic sharing of data (Figure 5). Fifty-five percent (55%) said it was their highest priority among other potential enhancements to ImmTrac.

Figure 5. ImmTrac Users Rank Five Categories of Enhancements to ImmTrac Discussed in Survey, 2012

Electronic sharing of immunization data	55%
Vaccine management	20%
Data quality	12%
User capabilities	11%
Reporting features	3%

Of ImmTrac users, 91% said that having "improved data sharing between the new system, local registries, and school health record systems" was very important to them (Figure 6).

Figure 6. Percentage of ImmTrac Users Who Ranked Potential Enhancements Related to Electronic Sharing of Data as Very Important, 2012*

Ability to:	
Have improved data sharing between new system, local registries, and school health record systems	91%
Send immunization records from an EMR directly to new system	84%
Send a patent's consent for inclusion in the registry directly from your EMR to the new system	85%
Access immunization data in the new system directly from our EMR	83%
Use the new system to report adverse events to the CDC	68%

**Respondents were asked to rank potential enhancement on scale of importance from 0 to 10, 10 being most important. Rankings of 8-10 are considered "very important"*

As noted, ImmTrac has recently been enhanced to accept HL7 messages from healthcare providers allowing providers with EHR/EMR to electronically submit immunization data. The survey asked respondents, whose organizations currently use a local IIS or EHR/EMR to exchange data with ImmTrac, to describe any challenges with the process. While some reported few challenges, others described the process as slow and time consuming, particularly during data migration between TWICES and ImmTrac. Providers who use EHR/EMR voiced similar issues about their local systems not interfacing correctly, or needing to

be retrofitted in order to interface with ImmTrac. Many providers are in queue to communicate with ImmTrac.

In addition to linking with electronic systems, many providers want the state's immunization registry to link to other health databases, in order to establish a more efficient continuum of care. Stakeholders said they want to see interoperability with cancer, newborn, and birth registries. When the survey asked ImmTrac users what additional child health screening features they would like to see in the registry, over half (58%) indicated tuberculosis testing results with readings. Almost a third said they want the newborn (29%) and lead screening (29%). Fourteen percent (14%) did not want additional child health screening features (Figure 7).

Figure 7. Childhood Screening Features Desired by ImmTrac Users, 2012	
Tuberculosis testing with readings	58%
Newborn screen	29%
Lead screening	29%
Body Mass Index	26%
Newborn hearing	24%
Asthma screening	23%
Early periodic screening, detection, and treatment	22%
None	14%
**Sum is greater than 100% because some respondents suggested more than one feature*	

User-capabilities and User-friendliness

With resect to other enhancements, 84% of ImmTrac users responded that an easier search for a patient's record is very important to them. Eighty-one percent (81%) said the ability to enter five or more immunizations on a patient is very important (Figure 8).

Figure 8. Percentage of ImmTrac Users Who Ranked Potential Enhancements Related to User-Capabilities and User-Friendliness as Very Important, 2012*	
Ability to:	
More easily search for a patient's record	84%
Enter five or more immunizations on a patient	81%
More easily add new patients	79%
Gather information offline and upload data at the end of the day during influenza clinics, health fairs, or public health emergencies	75%
More easily reset passwords	63%
**Respondents were asked to rank potential enhancements on a scale of importance from 1 to 10, 10 being most important. Rankings of 8-10 are considered "very important."*	

Reporting

Of ImmTrac users, 76% prioritized the following two reporting enhancements: 1) alerts for staff about minimum intervals for patients on 'catch-up' schedules and 2) 'next dose due' for patients with an upcoming appointment (Figure 9). Another stakeholder wanted ImmTrac to have the functionality to forecast immunizations in daycare settings.

Figure 9. Percentage of ImmTrac Users Who Ranked Potential Enhancements Related to Reporting as Very Important, 2012*

A report showing:	
Alerts for staff about minimum intervals for patients on "catch-up" schedules	76%
"Next dose due" for patients with an upcoming appointment	76%
"Doses administered" during public health emergencies	65%
How many patients received an immunization after receiving a reminder or recall notice	63%
Immunization rates for a specific clinic by age, vaccine series or single antigen	62%

**Respondents were asked to rank potential enhancements on a scale of importance from 1 to 10, 10 being most important. Rankings of 8-10 are considered "very important."*

Data Quality

Stakeholders offered several recommendations for improving data quality. Of registry users, 77% wanted the ability to mark patients as duplicate and 76% wanted the ability to update patient addresses (Figure 10). One meeting participant experienced issues with multiple medical record numbers, and suggested improved filters to identify these duplicates.

Figure 10. Percentage of ImmTrac Users Who Ranked Potential Enhancements Related to Data Quality as Very Important, 2012*

Ability to:	
Mark patient records as duplicates	77%
Update patient addresses	76%
Edit existing vaccine information	75%
Produce a report that shows a patient's missing information (address, phone number, lot number)	64%

**Respondents were asked to rank potential enhancements on a scale of importance from 1 to 10, 10 being most important. Rankings of 8-10 are considered "very important."*

Vaccine Management

Stakeholders desired improvements in the vaccine management capabilities of ImmTrac. Their number one priority in vaccine management is that ImmTrac is able to produce a report on patients who received a vaccine with a lot number that was recalled by a manufacturer (Figure 11).

Figure 11. Percentage of ImmTrac Users Who Ranked Potential Enhancements Related to Vaccine Management as Very Important, 2012*	
Ability to:	
Produce a report on patients who received a vaccine with a lot number that was recalled by a manufacturer	79%
Order VFC vaccines online	66%
Have your Vaccine for Children Inventory (C33) prepopulated with the VFC vaccine	60%
Receive notification when stock is low or about to expire	59%
Manage inventory for both private and VFC stock	52%
**Respondents were asked to rank potential enhancements on a scale of importance from 1 to 10, 10 being most important. Rankings of 8-10 are considered "very important."*	

Provider Utilization

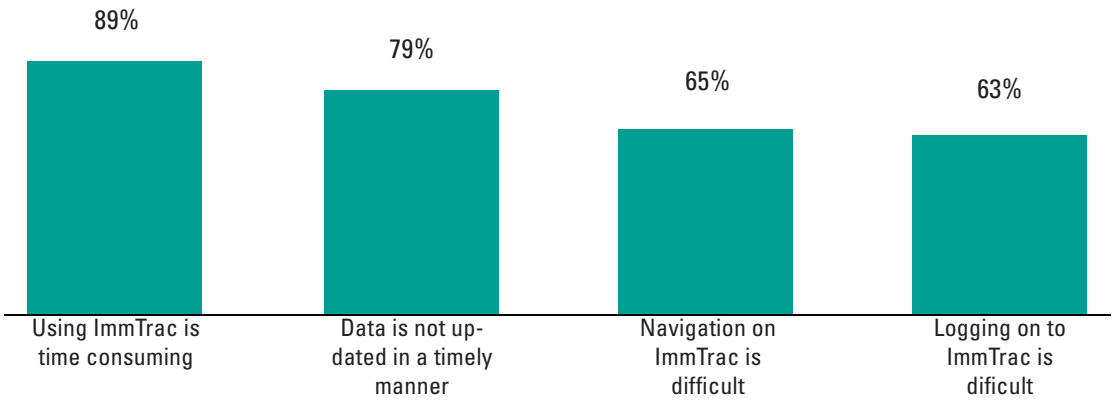
Eighty-one percent (81%) of survey respondents felt that lack of provider participation in ImmTrac is a "somewhat" or "very important" barrier to immunization. Although ImmTrac is a centralized registry, it is not up-to-date and records are incomplete because it is not being fully utilized. Transient populations and the fragmented healthcare system – where patients may receive care from multiple providers – make it difficult to maintain complete health records. Stakeholders recommend that providers optimize the use of ImmTrac, in order to have more coordinated and efficient care, and to prepare for emergencies such as pandemics.

"How do we get all immunizations into a registry so healthcare professionals can have access to records?"

- Stakeholder, Fort Worth

Many survey respondents speculated that immunization providers can benefit from technical training on ImmTrac. For example, when asked about barriers to utilization, 89% lacked confidence that providers know how to use the system. Furthermore, 89% of survey respondents concluded that providers believe ImmTrac is time consuming (Figure 12).

Figure 12. Percentage of Respondents Who Believe the Following Perceptions Among Providers are Barriers to Using ImmTrac, 2012

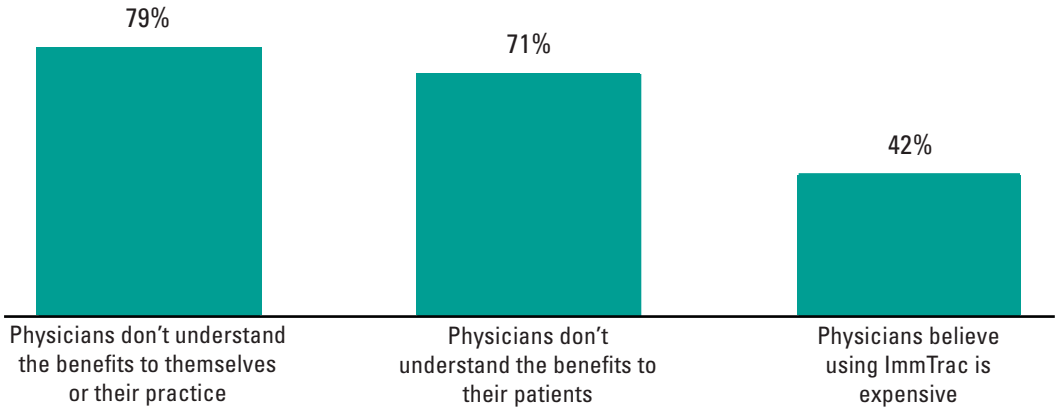


"If a child is less than 18 years and receives a vaccine, you are required to input the vaccine into ImmTrac. Some [children] are falling through the gaps."

- Stakeholder, Houston

Many respondents determined that barriers to utilization of ImmTrac exist because immunization providers need education on how it can be of value to providers and patients. Seventy-nine percent (79%) believed that providers don't understand the benefits to themselves or their practices and 71% believed that they don't understand the benefits to patients (Figure 13).

Figure 13. Percentage of Respondents Who Believe the Following are Barriers to Physician Utilization of ImmTrac, 2012



Recommendations

1. **Increase the efficiency of ImmTrac by modifying the current consent process from an "opt-in" to an "opt-out" system.** Texas can save millions of tax dollars by creating an "opt-out" immunization registry. Because the costs of an "opt-out" system are substantially lower than the current "opt-in" system, moving toward an "opt-out" process would allow critical dollars to go to making substantial improvements to the current ImmTrac registry.

2. **Augment ImmTrac with critical components related to electronic data sharing, quality, reporting, and vaccine management.** According to the CDC, increased data accuracy, timeliness, and completeness can improve the quality of IIS-based vaccination coverage, better support clinical decisions at the provider level, and improve the data available for other public health functions.[18]

3. **Enhance ImmTrac to ensure interoperability with EHR/EMR and other technology**. Electronic records, health information exchanges, and public health information systems are critical supports to a high-quality and cost-efficient healthcare system. A seamless connection between these entities will integrate data more efficiently, reduce redundancies, improve documentation processes, save administrative time, and offer greater continuity of care.

4. **Increase provider participation in ImmTrac through education**. Although immunization registries help providers in accessing and tracking immunization histories, researchers

surveyed more than 1,000 physicians nationwide and found that only three percent (3%) used immunization registries to help monitor their patients' immunization status.[19] Focused education and training can help providers better understand the benefits of IIS. Training should highlight how registries can more efficiently capture data, improve office efficiency, identify at risk populations, and follow transient populations.

III. Increase Immunization Awareness Among People Who Are Vaccine-Hesitant

Background

The CDC has proclaimed immunization to be the most important public health act in history, after safe drinking water.[20] Despite this fact, the question of whether or not to vaccinate weighs heavily on parents' minds.

A 2010 CDC study found that three out of four parents had at least one concern about the vaccines their child was receiving.[21] The most common concern reported by parents (36%) was their child receiving too many immunizations in one doctor visit. Other concerns reported by more than 30% of the parents included children getting too many immunizations in their first two years of life and vaccines causing learning and other developmental disabilities, such as autism.

There are a myriad of factors that contribute to parents' concerns.[22] The accessibility of news via the media and the Internet has made it easier for misinformation to spread. A recent study that assessed Internet usage statistics found that 71% of results from a Google.com search on the term "vaccination" were classified as anti-vaccination.[23] Furthermore, numerous articles and books promote alternative or delayed immunization schedules. The availability of philosophical exemptions to school requirements is another factor that has contributed to vaccine skepticism (see Section IV for more detail). Finally, the low incidence of vaccine-preventable diseases, as a result of successful public health prevention efforts, has led a new generation of parents to believe that vaccines are no longer necessary.

Over the years, some vaccines, like the human papillomavirus vaccine (HPV), have raised controversy and have had lower uptake rates than others. The CDC's 2010 National Immunization Survey for teens found that coverage rates for one dose of HPV were 49%, compared to 63% and 69% for meningitis and Tdap respectively.[24] In the US, HPV is the most commonly refused vaccine.[25] Reasons why young women have not been immunized include cost, safety, and a belief that the vaccine will influence sexual activity. Lack of provider recommendation was also cited as a reason why young women do not receive the HPV vaccine.[26]

> "Everybody has car insurance…getting immunized is like buying insurance to protect the body against disease."
>
> - Stakeholder, Austin

Providers are a key source of information and have a strong influence on parents' decision to vaccinate. The pediatrician should share what is and is not known about the risks and benefits of the vaccine in question, attempt to understand the parent's concerns about immunization, and address any misperceptions and misinformation.[27]

"Public awareness campaigns in English and Spanish regarding the safety and benefit of immunizations across the lifespan would help to increase immunization rates. Since people thankfully don't see the diseases that vaccines prevent, they tend to think these diseases don't exist anymore."

- Stakeholder, San Antonio

What Stakeholders Say

Outreach and the dissemination of scientifically correct information are critical for the health of Texans. Survey data revealed that 89% of respondents believe that "misinformation or lack of knowledge about vaccines" is a "somewhat" or "very important" barrier to increasing immunization rates in Texas.

At the stakeholder meetings, participants said that many parents in their offices and clinics have voiced negative comments about the HPV vaccine. According to survey respondents, 96%-97% believe that concerns about vaccine safety or side effects are partly responsible for the low rates of HPV vaccination among adolescent girls and boys. Stakeholders in San Antonio believed that misinformation about HPV also contributes to low uptake of the vaccine.

Participants felt strongly about the type of education and the manner in which messages should be conveyed, in order to increase immunization awareness. Stakeholders recommended using education that is communicated appropriately and effectively, taking into consideration literacy levels and highlighting both the benefits of immunization and the risks associated with not vaccinating. They also encouraged educators to "get creative" with their talking points and offer varying perspectives by which parents could understand vaccines. For instance, to counter the belief that HPV encourages pre-marital sexual exploration, one stakeholder suggested stressing the grim reality that "*HPV can be transmitted through the first encounter, and the first encounter is not always consensual.*" Another stakeholder from San Antonio made the following comment: "*Help parents understand that HPV is not just about women, but also men… you have to take into consideration partners.*" Stakeholders also stressed the importance of educational campaigns and media outreach that counter anti-vaccine sentiments and common misperceptions. One stakeholder suggested creating a DVD to be used in provider office waiting rooms that addresses misinformation and encourages parents to make informed choices about immunizing their children.

"It would be extremely helpful to have more media outreach to help educate the community, specifically for HPV. Our area has among the highest rates of HPV in young women, most of whom claim that they were not aware of the fact that they could have prevented it."

- Medical Assistant, El Paso

Finally, stakeholders expressed concern about adolescents not being able to consent to vaccines, because they are not listed in the statute as consenting individuals. This poses a challenge for adolescents who want to be empowered to protect themselves from vaccine-preventable diseases, but are limited based upon the vaccine beliefs and behaviors of their parents.

Recommendations

1. Encourage providers to invest in vaccine education and patient-provider interactions. Parents get vaccine information from a variety of sources, but they access their doctor more than any other source. Physicians should take the time to establish relationships with their parents by listening carefully, responding to their questions, and delivering messages in a tailored and customized fashion. According to the CDC and American Academy of Pediatrics, physicians should not turn away patients who delay or refuse vaccinations. To achieve the goal of vaccinating children, it is more productive to continue their relationship with the family and revisit discussions about vaccines during office visits.[28]

2. Employ strategies that acknowledge patients' concerns and reassure individuals who are vaccine-hesitant. Many models encourage providers to respond to patient concerns in a respectful and sensitive manner when questions are raised. The CASE method, developed by the Autism Science Foundation, acknowledges parents' concerns, describes the medical professional's expertise and knowledge, explains what the science says about vaccines, and advises the patient based on science.[29]

New 4-step Framework for Communicating Science: Making the CASE for Vaccines
(Alison Singer, President of Autism Science Foundation)
Corroborate: Acknowledge the parents' concern and find some point on which you can agree.
About Me: Describe what you have done to build your knowledge base and expertise.
Science: Describe what the science says.
Explain/Advise: Give advice to the patient, based on the science.

3. Use storytelling to demonstrate that vaccine benefits outweigh risks. Through storytelling, individuals can share experiences and engage their listeners, impart value and make meaning of their experiences, and address behavior change. For instance, *Vaccine-Preventable Disease: The Forgotten Story*, published by Texas Children's Hospital, illustrates the tragic stories of those who have been affected by vaccine-preventable diseases.

"Personal stories have a powerful impact."

- Stakeholder, San Antonio

4. Collaborate with the media to help dispel myths and misperceptions. Media relations provide a unique opportunity for stakeholders to promote immunization. Through mass media, stakeholders can inform the public about critical immunization issues and encourage them to take action. Media can take the form of public service announcements, opinion editorials, newspaper articles, television commercials, social media updates (e.g. on blogs, Facebook, Twitter), radio spots, etc.

5. Establish and strengthen community partnerships to increase outreach and education to those skeptical about vaccines. A stakeholder in Austin said we must

"*continue to improve the effectiveness of educating the public about the benefits of vaccination, especially target populations like college students, adolescents, and families with newborns.*" Another stakeholder recommended that we look for unique educational opportunities to dispel myths and misperceptions by connecting across different sectors of health.

6. Broaden the categories of individuals who can consent to receive immunizations to include adolescents over 14 years of age. The ability of adolescents to consent for immunization varies from state to state. In Texas, per the current statute, adolescents can only consent for *treatment* of reportable diseases. However, some adolescents may want to be vaccinated without parental involvement, particularly for vaccines that *prevent* sexually-transmitted infections.[30] As a result, some states are broadening their adolescent consent laws. For instance, as of January 2012, a minor in the state of California who is 12 years of age or older may consent to medical care related to the *prevention* of a sexually-transmitted disease without parental consent.[31] This means that girls and boys as young as 12 years of age can receive the HPV vaccine without the consent of their parents.[32]

IV. Reduce the Number of Vaccine Exemptions That Are Claimed Due to Reasons of Conscience

Background

Each state has immunization requirements or "school laws" that must be met before a child may enter school. School vaccination laws have a variety of public health benefits. Historically, the institution of school laws has drastically reduced the incidence of disease, while preventing outbreaks and minimizing disruptions to educational activities.[33] Despite these outcomes, vaccination requirements have provoked resistance and continue to be challenged by those skeptical of vaccines. Over the years, vaccine opponents have raised concerns about the effectiveness or need for vaccines, the purported harmful effects of introducing foreign substances into the body, and the misconception that vaccinations weaken the immune system and transmit, rather than prevent, disease.[34] As a result, states have developed systems that allow parents to exempt their children for medical, religious, or philosophical reasons.

Exemption policies vary widely across states. All 50 states offer medical exemptions for children who cannot receive immunizations due to medical reasons, such as allergies to vaccine components. Forty-eight states allow for religious exemptions, although the requirements for documenting such beliefs vary.[35] In addition, 20 states, including Texas, allow for philosophical or personal belief exemptions.[36]

Each year, DSHS surveys approximately 1,300 independent school districts and 800 accredited private schools to collect the immunization status of kindergarten and middle school children. The number of conscientious exemption affidavit forms filed is also collected. Since 2004, DSHS has reported a significant rise in the number of parents refusing vaccinations for their children due to reasons of conscience (Figure 14). According to the annual report, 0.57% of all students filed conscientious objection forms in 2011,[37] or approximately 28,432 of Texas's 4.9 million students.[38]

Figure 14. Percentage of K-12th Grade Students Getting Personal Belief Exemptions, Texas 2003-2012

	Total Exemptions	Percent Change from Previous Year
2003 to 2004	2,314	-
2004 to 2005	2,722	17%
2005 to 2006	6,770	148%
2006 to 2007	9,326	37%
2007 to 2008	10,011	7%
2008 to 2009	12,633	26%
2009 to 2010	19,050	50%
2010 to 2011	22,910	20%
2011 to 2012	28,432	24%

While an exemption rate of 0.57% may seem low, particularly when compared to other states, of most concern is the number of exemptions claimed. The total number of exemptions claimed in the past eight years has increased by more than 12 fold. Previous studies have shown that exemptions tend to cluster geographically and within schools.[39] Therefore, areas with high exemption levels might exist, even in states that have a low overall exemption rate, creating pockets of under-vaccinated and vulnerable children.[40]

To get a sense of exemption rates by county, The Immunization Partnership aggregated the number of exemptions and the total enrollment of the school districts and charter schools located in that county (Figures 15 and 16). Note that the exemption rate in a given county may be high, despite a low number of total exemptions (Briscoe County), often due to a small enrollment size in smaller districts. Likewise, a county may have a high number of reported exemptions (Harris County), but a low overall exemption rate, due to a large student enrollment size. Depending upon the clustering of students, either situation can pose a threat to the health of individuals and the community.

Figure 15. Texas Counties with the Highest Reported Percentage of Personal Belief Exemptions, 2010-2011 School Year		
	%	N
Burnet	4.08%	302
Briscoe	3.24%	6
Gaines	2.52%	80
Jeff Davis	2.25%	7
Upshur	1.85%	113
Blanco	1.79%	30
King	1.72%	2
Collingsworth	1.63%	10
Matagorda	1.52%	109
Source: Exemption figures from DSHS; enrollment data from Texas Education Agency; estimates calculated by totaling the number of exemptions reported by the districts and charter schools within a Texas County; Includes schools that report enrollment data; therefore private schools excluded.		

Figure 16. Texas Counties with the Highest Reported Number of Personal Belief Exemptions, 2010-2011 School Year		
	N	%
Harris	2,455	.30%
Tarrant	1,896	.53%
Collin	1,793	1.07%
Travis	1,522	1.01%
Dallas	1,228	.27%
Williamson	1,184	1.16%
Denton	1,034	.99%
Bexas	806	.25%
Montgomery	783	.87%
El Paso	621	.35%
Galveston	383	.50%
Hays	337	1.15%
Fort Bend	320	.32%
Burnet	302	4.08%
Bregg	256	1.04%
Source: Exemption figures from DSHS; enrollment data from Texas Education Agency; estimates calculated by totaling the number of exemptions reported by the districts and charter schools within a Texas County; Includes schools that report enrollment data; therefore private schools excluded.		

Exemptions have contributed to a resurgence of vaccine-preventable diseases that had once been eliminated. According to the CDC, the U.S. reported 222 cases of measles in 2011, a 15-year high. Of these cases, 90% were traced to other countries with lower immunization rates, and the majority of cases were among unvaccinated individuals.[41] Rates of pertussis also continue to rise. In 2011, there were 961 reported cases in Texas. Through August 2012, there have been 1,099 cases,[42] including five that have resulted in the death of infants.[43]

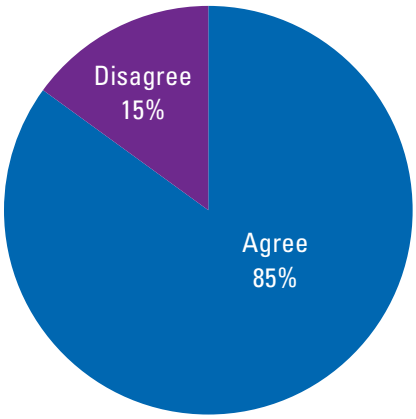
Children who receive exemptions and are not immunized are more vulnerable to contracting and spreading disease. According to a study by the CDC, children were 62 times more likely to get measles and 16 times more likely to contract whooping cough if their parents chose not to have them vaccinated.[44]

States with high non-medical exemption rates offer personal belief exemptions or make it relatively easy to obtain non-medical exemptions.[45] To thwart rising exemption rates and potential outbreaks, some states are instituting stricter vaccine exemption policies. In 2011-2012, six states (Washington, California, Arizona, Mississippi, New Jersey and Vermont) had legislation that would implement safeguards in the exemption process. For example, to obtain an exemption for a child in the State of Washington, a parent must obtain a signature from a healthcare practitioner and receive counseling on the risks and benefits of vaccination.[46] A bill similar to the Washington legislation was passed in Vermont.[47]

What the Stakeholders Say

The current exemption process in Texas requires people to submit a notarized affidavit when requesting an exemption from required vaccines. The survey asked respondents about their level of support for a change in Texas that would require the process to include written verification that the adult seeking a philosophical exemption was counseled by a healthcare provider on the risks and benefits of vaccination—a recommendation supported by the Pediatric Infection Diseases Society.[48] Eighty-five percent (85%) would support such a proposal (Figure 17).

Figure 17. The exemption process in Texas should also include a written verification that the person has been counseled by a healthcare provider on the risks and benefits of vaccination



Recommendations

1. Require written verification that individuals seeking an exemption for themselves or their children have been counseled by a healthcare professional on the risks and benefits of vaccination. Proponents of laws that strengthen vaccine exemption poli-

cies note that the process for obtaining an exemption should be no easier than getting the vaccination,[49] thereby deterring the number of exemptions that are sought based on "convenience, not conviction."[50] Legislation of this kind has the potential to reduce the risk of disease outbreaks by ensuring individuals become informed before opting out of vaccinations.

2. Institute a multi-pronged educational initiative to provide parents with evidence-based vaccine information. This could take a variety of forms, either creating a targeted campaign through DSHS or requiring physicians to provide parents with materials about the health consequences and risks (both individual and societal) that could result from claiming vaccine exemptions. Materials should be provided in both English and Spanish.

3. Authorize the state to pursue more detailed tracking and monitoring of exemptions. Currently, DSHS is only allowed to track the number of vaccine exemption affidavits requested through the DSHS website, and the zip codes from which the affidavits are requested. More comprehensive data could help public health officials to better understand state and local patterns of vaccine exemptions, and to develop policies and interventions that increase coverage in high-risk areas.

4. Appoint DSHS to conduct more detailed studies on the impact of vaccine exemptions and the reasons why individuals claim exemptions. Studies of this kind will benefit public health planning efforts, by identifying pockets of need and assessing the risk of disease outbreaks. Such research could also aid in driving targeted educational efforts to change immunization behavior.

5. Ensure that DSHS is the only agency empowered to grant exemptions to vaccination. Recently, the exemption policy has changed for the law that requires all college students to receive the meningitis vaccine prior to school entry (see section VI). The Texas Higher Education Coordinating Board (THECB) passed a rule that allows a college student, who wishes to claim an exemption from the requirement, to download a form from the THECB website, as opposed to requesting a form from DSHS. This process makes it easier for a student to claim an exemption, while setting a precedent for future vaccine exemption policies. DSHS should be the only agency empowered to grant exemptions, in order to safeguard the process and ensure that mechanisms are in place to monitor vaccine exemptions and capture data for disease prevention purposes.

V. Improve Immunization Uptake Among Childcare Providers

Background

In childcare facilities, the spread of bacteria and viruses is a safety risk for both childcare providers and for the children they serve. Specific infectious diseases likely to be transmit-

ted in childcare centers are respiratory, gastrointestinal, and skin infections.[51] Many of these diseases, including meningitis, chickenpox, and hepatitis A and B, are vaccine-preventable. Studies indicate that exposure to many infectious diseases is reduced if staff and children follow national recommendations for immunizations and personal hygiene.[52]

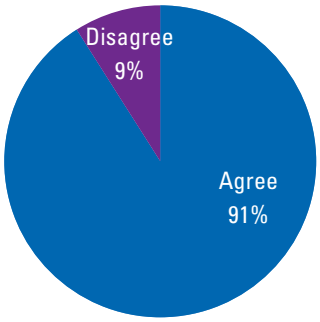
In 2011, The American Academy of Pediatrics, the American Public Health Association, and the National Resource Center for Health and Safety in Child Care and Early Education published national guidelines and standards to be followed, in order to ensure the health and safety of children. These guidelines include the following recommendations: 1) caregivers and teachers should be up-to-date with all recommended immunizations, 2) staff members who are inappropriately vaccinated for medical, religious, or philosophical reasons should provide documentation of the reason to the facility, and 3) in the event that vaccine-preventable disease outbreaks occurs in the facility, the local or state health department should be consulted to determine if unimmunized adults should be temporarily excluded from the workplace. The collaborators also stressed that routine immunization is the best means of preventing disease, and that providers who are not fully immunized put themselves, and the children for whom they care, at risk.[53]

Despite these guidelines, there are misconceptions about vaccines among childcare providers.[54] A study that assessed the knowledge and attitudes of Ohio-based providers regarding the influenza vaccine found that less than one-quarter of providers received their annual influenza vaccine. The most common reasons cited for not getting the vaccine were "I don't think I need the vaccine," "I don't think the vaccine will keep me from getting the flu," and "the vaccine is not safe."[55] Moreover, while the great majority of workers agreed that flu is a serious infection, that childcare providers can pass flu to children, and that children can spread flu to providers, fewer than 35% agreed that it was their duty to get the vaccination.[56]

What the Stakeholders Say

In 2011, the Texas legislature passed a bill that requires healthcare facilities such as hospitals to develop and implement vaccination policies to protect patients from vaccine-preventable diseases. To further protect the health and safety of children, stakeholders raised the question of whether or not childcare facilities should institute similar policies. Survey respondents were asked if they agree or disagree with the statement, "Individuals working at child care centers should be required to show proof that they have been vaccinated against certain vaccine-preventable diseases." Of respondents, 91% said yes, they "agree" or "strongly agree" (Figure 18).

Figure 18. Individuals working at childcare centers should be required to show proof that they have been vaccinated against certain vaccine-preventable diseases



Recommendations

1. Educate childcare providers about immunizations recommended to prevent the spread of disease. Anyone who works with children, especially in childcare centers, is at high risk of coming into contact with a number of bacteria or viruses.[57] Therefore, childcare providers should be up-to-date on the immunizations that are recommended for individuals who work with young children, including measles-mumps-rubella [MMR], tetanus-diphtheria [Td] or tetanus-diphtheria-pertussis [Tdap], varicella, influenza, and hepatitis B.[58] Because young children are also commonly infected with hepatitis A, childcare providers may be recommended to get this vaccine.[59]

2. Enhance childcare providers' knowledge, attitudes, and behaviors about immunization. Focus on dispelling myths and misperceptions about immunization through education and outreach. Possible messages include educating childcare providers about 1) the importance of immunization in reducing the transmission of disease to both infants/children and childcare providers, 2) disease processes and transmission, 3) safety and efficacy of vaccines, and 4) potential implications that could result from not getting immunized.

3. Encourage childcare facilities to establish an immunization policy for their employees. The institution of immunization policies in healthcare facilities has been identified as a best practice strategy in reducing disease transmission. Similar policies that increase immunization awareness and encourage childcare providers to get vaccinated should be considered for childcare facilities. Studies show that directors of childcare centers who are aware of the immunization recommendations for providers are more likely to make staff immunization a priority, have a written immunization policy for their staff, and actively promote staff immunization.[60]

VI. Decrease the Incidence of Bacterial Meningitis

Background

Bacterial meningitis is a potentially fatal disease that kills 1 in 10 individuals who become infected.[61] Since 2002, approximately 650 cases of bacterial meningitis have been reported in Texas. For the past five years the number of meningococcal disease cases for Texas has ranged from 45 reports in 2006 to 59 reports in 2010. The highest percentage of cases have

been reported in the following age (by years) groups: 15% in the under 1 age group, 17% in the 20 to 29 age group, and 17% in the 60 and over age group.[62] Of the 282 cases reported since 2006, 11% have resulted in death. College students are at increased risk of meningitis because they live in close quarters and are exposed to high-risk behaviors.

In 2009, the Texas Legislature passed the Jamie Schanbaum Act, requiring all students living in college dorms to be vaccinated against meningitis. Since its passage, two key events prompted the expansion of the law. In February 2011, a Texas A&M University student, Nicolis Williams, passed away after contracting bacterial meningitis. Nicolis did not live in a college dormitory so the existing law did not apply to him. In 2011, the CDC Advisory Committee on Immunization Practices (ACIP) updated its meningococcal vaccination recommendations to include a booster dose at age 16 years to help protect individuals when the incidence of meningitis peaks, at 16-21 years—a time when many individuals enroll in college.[63]

In 2011, the State of Texas passed Senate Bill 1107, which made changes to the existing meningococcal vaccination requirements and aligned state law with the updated ACIP recommendations. The revised law, known as the Jamie Schanbaum and Nicolis Williams Act, requires that all students entering a public or private higher education institution, regardless of where they live, show proof that a meningococcal vaccination dose or booster was received within the five years prior to enrollment.

Students who have a medical, religious, or philosophical objection to receiving the vaccination can claim an exemption from the requirement. In order to request an exemption from a vaccine requirement in Texas, a student must electronically order an exemption form from DSHS. DSHS processes the request and mails the form to the requestor. However, the vaccine exemption policy for the meningitis requirement was recently modified. There are now two processes for claiming an exemption: 1) new students who are under the age of 18 or are living in on-campus housing must order the official DSHS form and 2) new students age 18 years of age or older and not living or residing in on-campus housing may claim an exemption by downloading an official form from the Texas Higher Education Coordinating Board (THECB) website.

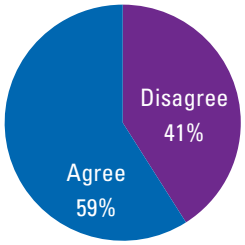
The Immunization Partnership has been communicating regularly with DSHS and institutions of higher education to understand implementation issues and share best practices related to the legislation. According to the institutions, many students are facing issues related to vaccine cost and availability. The average cost of the meningococcal vaccine is over $100 (and could possibly range from $100 to $140).[64] This cost may or may not include an administrative fee, which is charged by some providers. As noted earlier, DSHS recently scaled back its Adult Vaccine Safety Net Program, which provides vaccine to uninsured adults 19 years of age and older. Due to budget constraints, meningococcal vaccine was removed from the list

of vaccines provided, limiting the availability of vaccine at public health clinics. This poses a significant challenge for this cohort of individuals, who do not routinely access preventive care and are of the age group least likely to have health insurance. In 2010, 27% of 18-24 year olds were uninsured.[65]

What the Stakeholders Say

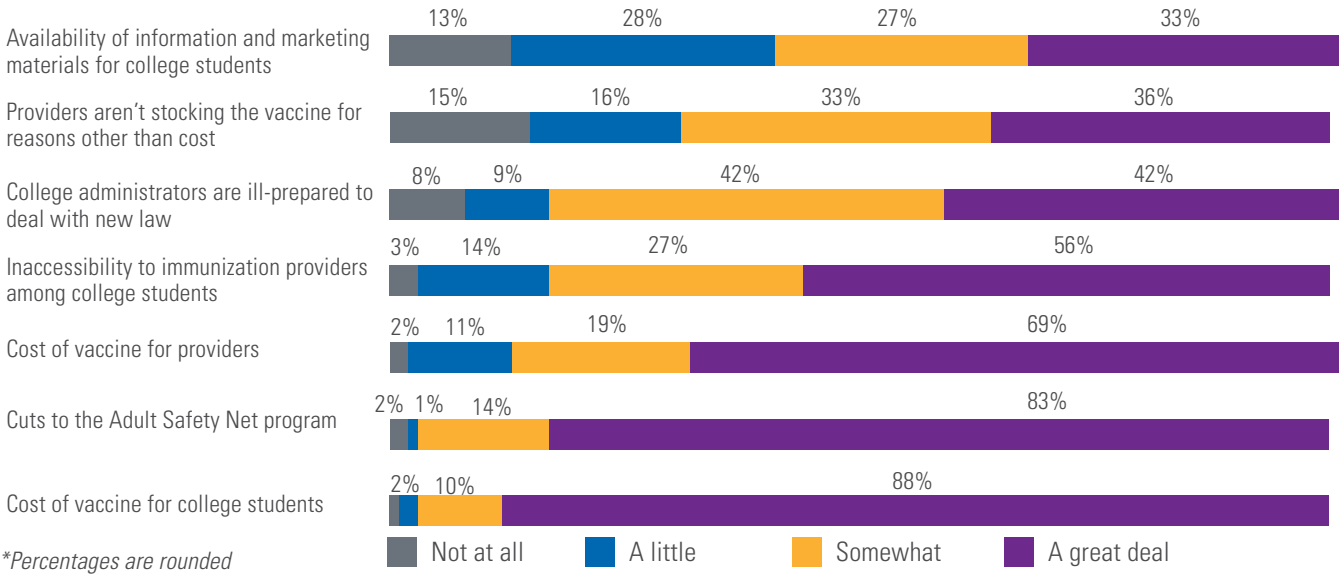
According to stakeholders, the Jamie Schanbaum and Nicolis Williams Act has raised awareness about meningitis, the potentially fatal consequences that can result from contracting the disease, and the importance of immunizing college students in order to prevent transmission. Stakeholders also felt that the implementation of the law is improving the health and well being of college students. Of survey respondents, 59% either "agreed" or "strongly agreed" that the new law results in more college students receiving preventive health checks (Figure 19).

Figure 19. The New Law Results in More College Students Receiving Preventive Health Checks



With respect to challenges, cost is the main barrier facing college students as they try to get their meningococcal vaccination before classes begin. Ninety-eight percent (98%) of respondents said that cost of vaccine makes it "somewhat" or "a great deal" more challenging for college students to get their meningococcal vaccine, 88% said that cuts to the Adult Safety Net Vaccine program in Texas make it "somewhat" or "a great deal" challenging, and 88% said that the cost of vaccine for providers makes it "somewhat" or "a great deal" challenging. Figure 20 shows several of the additional barriers affecting college students.

Figure 20. Extent to Which the Following Issues Make It More Challenging for College Students to Get their Meningococcal Vaccination, 2012



*Percentages are rounded

Cuts to the Adult Vaccine Safety Net Program have had tremendous effects on access to the meningococcal vaccine. Many students are seeking the vaccine at public health clinics, but are being "turned away" as a result of the change in policy. Other students are having difficulty locating the vaccine, because some private providers are not stocking it. In turn, students are accessing commercial pharmacies and having to pay the private, retail cost of the vaccine. They also indicated that pharmacies, like Walgreens, are making it challenging to receive the vaccine by requiring that students have their immunization records at the time of administration.

> *"This has been a major issue for college students, insured and uninsured in receiving the vaccine. In a five day period in July, our office received 132 phone calls/visits requesting the meningitis vaccine. The major complaint was the cost of the vaccine along with primary care providers not carrying the vaccine." ~Stakeholder, Rosenberg*

"Cuts to the Adult Safety Net program, specifically to meningococcal vaccine, were a disaster especially in light of the new college mandate. DSHS cuts will now expect low income, under-insured adults to reach deep in their finances to get the vaccine - it's a shame Texas did this and put their citizens at risk."

- Stakeholder, Austin

Stakeholders are concerned that these barriers are leading some students to request exemptions to the requirement, hence putting some students at unnecessary risk of contracting meningitis. Several stakeholders are discouraged that the THECB passed rules which allow students to download exemption forms directly from the THECB website. This change makes it easier for students to claim exemptions, weakening the intent of the meningitis legislation and setting a precedent for future vaccine exemption policies. Furthermore, THECB does not intend to track the number of forms that are being downloaded through the website or gather information on the schools or zip codes in which students are claiming exemptions. This could pose a significant risk, in the case of an outbreak, when targeted interventions are necessary to prevent the spread of disease.

"We received calls from administrators of local colleges, asking for help to provide the vaccine to their students. It was extremely frustrating to have to tell them we couldn't help"

- Director, public health department, Houston

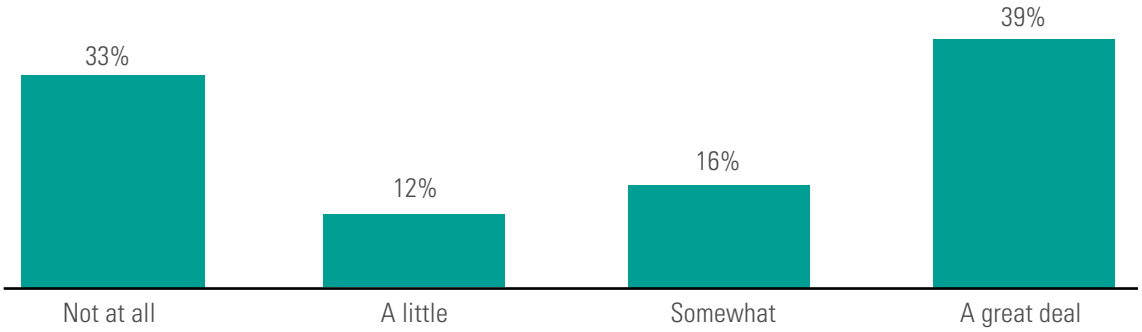
Overall, our assessments revealed that stakeholders respect the intent of the law, and support its efforts to protect college students from this potentially deadly disease. Colleges like University of Texas Pan American, University of Texas San Antonio, Houston Community College, and Trinity University were receptive to the change in policy and incorporated best practice strategies to maximize the number of students protected from meningitis. Trinity University, for instance, actively reached out to their student body prior to their arrival on campus and had a positive outcome, with no students unable to enroll. In order to address barriers related to access and cost, some colleges offered on-site immunizations and folded the cost of the vaccine into the tuition.

Despite these success stories, some colleges felt ill-prepared to deal with the new law. Specifically, they felt they were not effectively educated about the requirement, where the vaccine could be accessed, and what brand of the vaccine was appropriate to give. College representatives also explained that there were discrepancies in how community colleges implemented the law. For instance, some schools granted a grace period, while others did not. A few colleges alleged low enrollment due to the requirements; however, this was not

a widespread report. Furthermore, the increasing cost of college and decreased access to financial assistance for students nationwide make it difficult to attribute any dips in enrollment to the meningitis requirement.

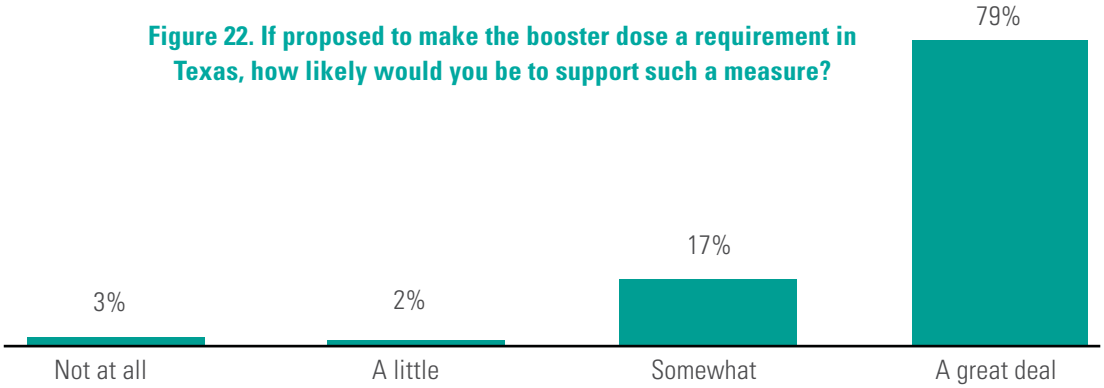
Some stakeholders felt that the law could be refined in order to better streamline the implementation process. Since the incidence of meningitis decreases after the age of 21, stakeholders recommended that the maximum age requirement for the vaccination be decreased. Per the statute, all college students up to age 30 are required to get the meningococcal vaccination. According to one college administrator, the median age of those entering school is 27 years. The survey asked respondents, "If proposed that the age range be decreased so that college students through 21 are required to get immunized, how likely would you be to support this proposal?" Sixty-seven percent (67%) of survey respondents said they would likely support such a proposal (Figure 21).

Figure 21. If proposed that the age range for meningococcal vaccination be decreased so that college students through age 21 are required to get immunized, how likely would you be to support this proposal?



As mentioned earlier, the CDC now recommends that 16-year-olds receive a booster dose of meningococcal vaccine. Stakeholders also proposed requiring this booster dose at 16 years, in order to better align state policy with CDC recommendations and ensure that 16-year-olds are immunized before entering college. The survey asked respondents, "If proposed to make the booster dose a requirement in Texas, how likely would you be to support such a measure?" Ninety-seven percent (97%) of respondents said they would likely support such a measure (Figure 22).

Figure 22. If proposed to make the booster dose a requirement in Texas, how likely would you be to support such a measure?



Recommendations

1. Refine the law to address challenges and to ease the logistics of administering the law.
    i. Revise the age requirement for the law. By removing the immunization requirement for students 22 years of age and older at the time of enrollment, approximately 168,000 college students would be eliminated from the require ment.[66] This revision recognizes that the incidence of meningitis peaks between ages 16 and 21 years and would align the law with CDC age recommendations for the meningitis vaccine.
    ii. Require 16-year-olds to receive a booster dose of the meningococcal vaccine. This requirement would align state policy with CDC recommendations and would ensure that teens who received the booster would not need to be re-immunized before entering college.

2. Restore meningococcal vaccine to the list of vaccines available under the Adult Vaccine Safety Net Program. DSHS' program to provide the meningococcal vaccine at a discounted cost to students ended in January 2012. The ASN program is a vital resource for adults who cannot afford the cost of the vaccine. Additional funding is needed to ensure that low-income students can continue to access the vaccine.

3. Educate students about the vaccine requirement and its importance in preventing the transmission of bacterial meningitis. DSHS and THECB collaborated to compile useful information about the disease, vaccine requirements, where to obtain the vaccine, and exemption policies. Students can be directed to the following website for more information: http://www.CollegeVaccineReqiurements.com. When educating students, consider sharing stories of how meningitis has impacted Texas families. Texas Children's Hospital recently created a video, entitled *Facing Meningitis* (available at http://www.youtube.com/watch?v=h2-U1S74OH0), which illustrates the hardships of both the Williams and Schanbaum families.

4. Share best practice strategies with college administrators and registrars on how to implement the requirement. Several colleges across Texas have been successful in educating students about the requirement, referring them for vaccination, and incorporating the requirement into the registration process, without seeing drops in enrollment. Some of these best practices include: 1) educating students at multiple contact points (prior to their arrival on campus and during the admissions process, 2) offering on-site immunizations, and 3) folding the cost of the vaccine into tuition or subsidizing the cost of the vaccine. Profiling these institutions and their strategies can help ease the burden of implementation for schools facing challenges.

5. Increase access to the meningitis vaccine for uninsured and underinsured college students. There are a variety of strategies that stakeholders suggested employing in order to improve access for uninsured and underinsured college students, including the following: 1) connect students with Patient Assistance Programs, 2) encourage college students to get vaccinated prior to college entry, and while they qualify for free or low-cost vaccine under the TVFC program, and 3) increase outreach opportunities to vaccinate high school students, through health fairs and immunization clinics.

VII. Increase Efforts to Control Pertussis

Background

Pertussis, also known as whooping cough, is not a disease of the past.[67] Known for its uncontrollable and violent coughing spasms, pertussis is a highly contagious respiratory disease. Although pertussis hits all ages, it most commonly affects infants and young children, and can be fatal in babies less than one year of age. ACIP recommends that infants are vaccinated against pertussis, starting at 2 months of age. The Tdap (tetanus-diphtheria-pertussis) vaccine is recommended for adolescents aged 11-18 years of age, women in their second or third trimester of pregnancy (20th week or more), all adults who have not yet received a booster dose in adulthood, and anyone who plans to be in close contact with infants less than 12 months of age.[68]

According to the CDC, more than 22,000 cases of pertussis were reported nationwide through August 2012, including 13 pertussis-related deaths, with the majority of deaths in infants less than three months of age.[69] Nationally, states have reported an increase in pertussis incidence in 2012.[70] As of August 2012, DSHS reported 1,099 confirmed cases of pertussis in Texas. This surpasses the 2011 case count of 961. The counties with the highest number of pertussis cases in Texas include Hidalgo, Bell, McLennan, El Paso, Cameron, Midland, Wichita, Winkler, Jim Wells, San Patricio, Coryell Falls, and Palo Pinto Counties.[71]

The rise in the number of reported pertussis cases is partly due to an increasing number of cases in adolescents and adults who have lost their immunity from their childhood vaccines and need booster doses. In 2010, the Texas legislature passed HB 3336, which requires a hospital, birthing center, physician, or midwife that provides prenatal care to a pregnant woman or at delivery, to give the woman, father, and other adult caregivers educational information on pertussis disease and the availability of the Tdap vaccine to protect against pertussis. This requirement mirrors the "cocooning" vaccination strategy, recommended by the CDC, which is the practice of vaccinating all close contacts of infants to protect the newborn from disease.[72] By getting a pertussis-containing vaccine (Tdap), adults and adolescents remain disease free, thereby protecting infants from pertussis.[73]

What the Stakeholders Say

Stakeholders mentioned that cocooning efforts are underway in some hospitals in Texas, including Ben Taub General Hospital in Houston, but not widely used. Some stakeholders suggested that other hospitals adopt this process. In response to this comment, stakeholders expressed challenges with covering the cost of the Tdap vaccine when uninsured or underinsured caregivers present at a hospital or provider office. Furthermore, there is the logistical challenge of vaccinating the family members with Tdap if they are not regular patients of the provider.

A few stakeholders also voiced concerns about limitations that CHIP enrollees are facing. Many CHIP enrollees are covered under the CHIP Perinatal Program, which does not cover the Tdap vaccine. However, because they are considered insured, they are not eligible for Tdap or other vaccines under the Adult Vaccine Safety Net Proram. This poses a severe challenge for providers who are attempting to vaccinate underinsured pregnant mothers in their second and third trimester of pregnancy, in order to help protect their unborn children from contracting the disease. Some clinics are vaccinating pregnant women with Tdap, but are paying for the vaccine themselves, knowing that women may refuse the vaccine due to cost.

> "We would like to routinely vaccinate our prenatal patients at 20+ weeks with Tdap, but because the clinic now has to purchase a private stock of those doses, we may not be able to afford to offer Tdap to our prenatal patients much longer… They will have to wait until they are no longer 'covered' by the CHIP Perinatal Program (after delivery and postpartum visits) in order for them to be uninsured and eligible for ASN vaccine. We then hope the mother will return for care."
>
> - Director, FQHC, Austin

Recommendations

1. **Advocate that the Tdap vaccine be included in the list of vaccines covered under the CHIP Perinatal Program**. Although ACIP-recommended vaccines are covered for children, the CHIP program does not cover the Tdap vaccine for pregnant women. This poses a potential risk to unborn children, as unvaccinated mothers could contract pertussis and expose their infants.

2. **Share best practice strategies for designing and implementing cocooning efforts.** Several hospitals across Texas have successful cocooning efforts in place. In 2010-2011, DSHS engaged cocooning experts and advocates, in order to establish best practice strategies for physicians who would like to implement cocooning efforts. The result was a handbook, promotional poster, brochure, and an informational website (http://www.PreventPertussis.com). Successful strategies include: 1) identifying cocooning champions who promote the cause, 2) establishing standing orders, 3) providing the Tdap vaccine at an affordable cost and within a rate that is reimbursed to include a profit margin, 4) creating patient demand for the vaccine, 5) training staff to promote and answer questions about Tdap/cocooning, 6) ensuring vaccine is readily available, and 7) implementing procedures to screen and vaccinate patients and caregivers.[74]

3. **Disseminate information about pertussis, and the safety and efficacy of the Tdap vaccine.** During the meetings, there were misconceptions raised about the following: 1)

safety of the Tdap vaccine, particularly among pregnant women, 2) decreased immunity against pertussis, as a result of waning immunity from childhood vaccines, and 3) efficacy of the Tdap vaccine and the immune response in adolescents and adults, after one dose. Such questions warrant the need to educate providers and parents about these topics using relevant vaccine research.

APPENDICES & ENDNOTES

APPENDIX I: METHODOLOGY FOR WEB-BASED SURVEY

The 2012 web-based survey sought to gather information and perspectives from immunization stakeholders familiar with immunization issues and Immunization Information Systems in Texas. It was the fourth of its kind, and was sponsored by the St. David's Foundation.

Staff from The Immunization Partnership, with assistance from Texas Department of State Health Services and Nybeck Analytics, constructed the 2012 survey. They used questions from the surveys administered in 2006, 2008, and 2010 and included topics deemed important at the 2012 stakeholder meetings. Experts in immunization, immunization registries, and survey research piloted the survey and offered valuable feedback that was incorporated. The online survey was administered using SurveyMonkey.

On July 24, 2012, staff from The Immunization Partnership sent emails to immunization stakeholders on their statewide mailing list, inviting them to complete the survey. Over 1,800 people are on this list. Many on the mailing list are people who actively use IIS. They include people who work for city and county health departments, school districts, private non-profit clinics, private for-profit doctors' offices, and hospitals. Other invitees included foundation staff members and representatives of the Texas Pediatric Society, Texas Medical Association, Texas Public Health Coalition, the Texas Immunization Stakeholder Working Group, and immunization coalitions across Texas. The email invitation encouraged people to forward the link to their colleagues. The Immunization Partnership staff sent several email reminders to complete the survey, and also posted the survey on its Facebook page.

Among the 217 people who completed the survey, 81 (37%), said they participated in at least one of the four stakeholder meetings hosted by The Immunization Partnership in 2012. Sixty-five percent (65%) of the respondents were healthcare providers.

The purpose of the survey was to collect information from immunization stakeholders familiar with immunization issues in Texas. Each response represents an important view that any number of people may share. The percentages shown in the tables can act as a guide to interpreting the salience of the issues. Findings in this report represent individual responses, and some of the respondents may work in the same clinic or office.

APPENDIX II: HOW STAKEHOLDER MEETINGS WERE CONDUCTED

During the spring and summer of 2012, The Immunization Partnership and Frontera Strategy conducted a series of stakeholder meetings across Texas. Four meetings were held in Austin, Fort Worth, Houston, and San Antonio.

The goals of the stakeholder meetings were to make people aware of current events in immunization on the state and national front, determine local concerns, share advocacy strategies and techniques, and identify priorities. The stakeholder meetings also promoted the Texas Immunization Summit and continued to build the statewide network of Texans interested in improving immunization policies and practices.

The Immunization Partnership collaborated with local immunization coalitions, government entities, and statewide medical/pediatric associations to assist in the planning, coordination, and implementation of the stakeholder meetings. Participants were recruited by local champions in the communities where the meetings were held. Recruitment included: 1) flyers strategically distributed by local constituents, 2) outreach during special events, including the Texas Medical Association (TMA), Texas Pediatric Society (TPS), and Texas Immunization Stakeholder Working Group (TISWG) meetings, 3) promotion in TMA, TPS and TISWG newsletters, 4) compilation of lists from existing client databases, and 5) word-of-mouth promotion.

Approximately 169 Texans participated in the meetings including parents, healthcare providers, state agency personnel, and representatives from hospitals, foundations, medical associations, local public health authorities, and pharmaceutical companies. Events were scheduled at times and places convenient to the broadest range of participants possible.

Stakeholder meetings in 2012 addressed these topics: implementation of electronic medical records, improvements to ImmTrac, legislation related to meningitis, HPV, vaccine exemptions, vaccine hesitancy, and vaccine funding. Participants had the opportunity to raise additional concerns and ideas. Careful notes were taken at each session to ensure that emerging trends and themes could be included in the proceedings of the Texas Immunization Summit and this publication.

ENDNOTES

[1] Texas Department of State Health Services. "Reducing Vaccine-Preventable Disease in Texas: Strategies to Increase Vaccine Coverage Levels," September 2010. Available: www.dshs.state.tx.us/immunize/docs/2008Report.pdf. August 2012.

[2] Ibid.

[3] Texas Department of State Health Services. "Varicella (Chickenpox) Statistical Data." July 2012. Available: http://www.dshs.state.tx.us/IDCU/disease/chickenpox/Varicella-%28Chickenpox%29-Statistical-Data.doc. August 2012.

[4] Texas Department of State Health Services. "Texas Childhood Immunization Rates Hit 5-Year High in National Survey: Press Release." September 2008. Available: http://www.dshs.state.tx.us/news/releases/20080904.shtm. August 2012.

[5] Ritter, M. "Texas Department of State Health Services: Texas Immunization Presentation." Presentation to the Texas Immunization Stakeholder Working Group, Austin TX, March 22, 2012.

[6] Ibid.

[7] Stewart, A.M., et al. *The US Affordable Care Act: US Vaccine Policy and Practice*. 2010. Available: http://sphhs.gwu.edu/departments/healthpolicy/careact/FINAL%20REPORT.pdf. August 2012.

[8] U.S. Department of Health and Human Services. "The Affordable Care Act and Immunizations." Available: http://www.healthcare.gov/news/factsheets/2010/09/affordable-care-act-immunization.html. August 2012.

[9] Cathy Schoen, M.S., Michelle M. Doty, Ph.D., Ruth H. Robertson, M.Sc., and Sara R. Collins, Ph.D. "Affordable Care Act Reforms Could Reduce the Number of Underinsured U.S. Adults by 70 Percent." *Health Affairs*, Sept. 2011 30(9):1762–71. Available: http://www.commonwealthfund.org/Publications/In-the-Literature/2011/Sep/Reduce-Uninsured.aspx. August 2012.

[10] "Reducing Vaccine-Preventable Disease in Texas: Strategies to Increase Vaccine Coverage Levels," Texas Department of State Health Services. September 2010. Available: www.dshs.state.tx.us/immunize/docs/2008Report.pdf. August 2012.

[11] Johnson, D.R., et al. "Barriers to Adult Immunization," *The American Journal of Medicine*, 2008, 121, S28–S35.

[12] Texas Medical Association. "Texas Tops in EHR Incentive Payments." *Technology: EHR Incentive Program*. July 17, 2012. Available: http://www.texmed.org/Template.aspx?id=25017. August 2012.

[13] "Meaningful Use" is a part of the requirement for providers to access ARRA HITECH funds for adoption of EMRs. See: Thorman, Chris. "Updates on meaningful use, certified EHR technology and the stimulus bill." *HealthcareITNews*. February 4, 2010. Available: http://www.healthcareitnews.com/blog/updates-meaningful-use-certified-ehr-technology-and-stimulus-bill. August 2012.

[14] Centers for Disease Control and Prevention. "What are IIS?" *National Immunization Program*, September 2008. Available: http://www.cdc.gov/vaccines/programs/iis/about.html. August 2012.

[15] Boom, J.A., et. al. "Immunization Information System Opt-In Consent: At What Cost?" *Journal of Public Health Management and Practice*, 2010, 1-8.

[16] Ibid.

[17] Feikema, S.M., Klevens, R.M., Washington, M.L., Barker, L. "Extra Immunization Among US Children," *Journal of the American Medical Association*, 2000; 283:1311-1317.

[18] Centers for Disease Control and Prevention. "Progress in Immunization Information Systems – United States, 2009," *Morbidity and Mortality Weekly Report*, January 14, 2011 / 60(01); 10-12. Available: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6001a3.htm. August 2012.

[19] Schaffer S.J., et al. "Adolescent Immunization Practices: A National Survey of U.S. Physicians," *Archives of Pediatrics & Adolescent Medicine*. 2001;155:566-571.

[20] Centers for Disease Control and Prevention. "Why immunization?" *Parent's Guide to Immunization*. Available: http://www.cdc.gov/vaccines/vac-gen/downloads/pg_why_immz.pdf. August 2012.

[21] Kennedy, A., et al. "Confidence about Vaccines in the United States: Understanding Parents' Perceptions,"

Health Affairs, 30, no. 6 (2011): 1151-1159.

[22] Ibid.

[23] Kata, A. "A Postmodern Pandora's Box: Anti-Vaccination Misinformation on the Internet," *Vaccine* 28 (2010) 1709–1716.

[24] Centers for Disease Control and Prevention. "National Survey Shows HPV Vaccine Rates Trail Other Teen Vaccines," Media Relations: Press Release, August 25, 2011.

[25] Freed, G.L., et al. "Parental Vaccine Safety Concerns in 2009," *Pediatrics*, 125, No. 4 (2010): 654 -659. Available: http://www.pediatricsdigest.mobi/content/125/4/654.full. August 2012.

[26] Dorell, C. "Human Papillomavirus (HPV) Vaccination Coverage in the United States, National Immunization Survey-Teen, 2007-2010," Session Three: HPV Vaccination Program – *Current Status and New Recommendations*. Presentation at 2012 National Immunization Conference Online, March 26, 2012. Available: https://cdc.confex.com/cdc/nic2012/webprogram/Session12993.html. August 2012.

[27] Douglas S. Diekema and the Committee on Bioethics. "Responding to Parental Refusals of Immunization of Children," *American Academy of Pediatrics*. Vol. 115 No. 5, May 1, 2005: 1428 -1431.

[28] O'Reilly, K.B. "Regaining Trust After Vaccine Threat Debunked," *American Medical Association News*. January 24, 2011. Available: http://www.ama-assn.org/amednews/2011/01/24/prl20124.htm. August 2012.

[29] Singer, A. "Making the CASE for Vaccines: A New Model for Talking to Parents about Vaccines," Presentation at NJ PCORE VFC Conference, November 2010. Available: http://www.aapnj.org/uploadfiles/documents/f73.pdf. August 2012.

[30] Medscape Education. "Seizing the Adolescent Vaccination Opportunity." August 2012. Available: http://www.medscape.org/viewarticle/769319. August 2012.

[31] Ibid.

[32] California Department of Public Health. Minors, medical care consent (chapter 652) summary of the law. http://www.cdph.ca.gov/programs/std/Documents/AB-499-Fact-Sheet.pdf. Accessed July 14, 2012.

[33] Diekema, D.S. "Improving Childhood Vaccination Rates," *Vaccine Hesitancy: Understanding Parents' Concerns and the Impact of Anti-Vaccine Rhetoric*. VICNetwork. February 2012. Available: http://www.vicnetwork.org/wp-content/uploads/VICNetworkWebinarFeb29-2012-slides.pdf. August 2012.

[34] Hodge, JG and Gostin, LO. "School Vaccination Requirements: Historical, Social, and Legal Perspectives." *Center for Law and the Public's Health at Johns Hopkins and Georgetown Universities*. February 15, 2002. Available: http://www.publichealthlaw.net/Research/PDF/vaccine.pdf. August 2012.

[35] The Pediatric Infectious Disease Society. *A Statement Regarding Personal Belief Exemption from Immunization Mandates*, March 2011. Available: http://www.pids.org/images/stories/pdf/pids-pbe-statement.pdf. August 2012.

[36] National Conference of State Legislatures. "States with Religious and Philosophical Exemptions from School Immunization Requirements," *School Immunization Exemption State Laws*. February 2012. Available: http://www.ncsl.org/issues-research/health/school-immunization-exemption-state-laws.aspx. August 2012.

[37] Texas Department of State Health Services Immunization Branch. "2011-12 Annual Report of Immunization Status." Available: http://www.dshs.state.tx.us/immunize/coverage/schools.shtm. August 2012.

[38] Texas Education Agency. "Snapshot 2011: State Totals." Available: http://ritter.tea.state.tx.us/perfreport/snapshot/2011/state.html. August 2012.

[39] Sugerman D.E., et al. "Measles Outbreak in a Highly Vaccinated Population, San Diego, 2008: Role of the Intentionally Undervaccinated," *Pediatrics* 2010; 125: 747-55.

[40] Centers for Disease Control and Prevention. "Vaccination Coverage Among Children – United States, 2009-10 School Year," *Morbidity and Mortality Weekly Report,* June 3, 2011 / 60(21); 700-704. Available: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6021a4.htm. August 2012.

[41] Beasley, D. "Measles cases reached 15-year high in 2011: CDC," Reuters, April 20, 2012. Available: http://www.reuters.com/article/2012/04/20/us-usa-health-measles-idUSBRE83J0X020120420. August 2012.

[42] Texas Department of State Health Services. "Update on Pertussis in Texas, 2012." Available: http://www.dshs.state.tx.us/IDCU/disease/pertussis/Pertussis-Update-2012.doc. August 3, 2012.

[43] Meyers, Rhiannon. "Three South Texas babies die of whooping cough." *Corpus Christi Caller Times*. Available: http://www.caller.com/news/2012/aug/21/three-south-texas-babies-die-of-whooping-cough/. August 21, 2012.

[44] Offit, Paul. *Deadly Choices: How The Anti-Vaccine Movement Threatens Us All*. New York: Basic Books, 2011.

[45] Omer, S.B, et al. "Nonmedical Exemptions to School Immunization Requirements: Secular Trends and Association of State Policies with Pertussis Incidence," *Journal of the American Medical Association*. 2006 Oct 11;296(14):1757-63.

[46] Peterson, Diane. "Non-Medical Exemptions to School Mandates," Presentation to the IZCoalitions Conference Call. June 28, 2012. Available: www.izcoalitions.org/DPslides.pdf. August 2012.

[47] Diekema, D. "Improving Childhood Vaccination Rates," *Vaccine Hesitancy: Understanding Parents' Concerns and the Impact of Anti-Vaccine Rhetoric*. VICNetwork, February 2012. Available: http://www.vicnetwork.org/wp-content/uploads/VICNetworkWebinarFeb29-2012-slides.pdf. August 2012.

[48] The Pediatric Infectious Disease Society. *A Statement Regarding Personal Belief Exemption from Immunization Mandates*, March 2011. Available: http://www.pids.org/images/stories/pdf/pids-pbe-statement.pdf. August 2012.

[49] Peterson, Diane. "Non-Medical Exemptions to School Mandates." IZCoalitions Conference Call. 28 June 2012. http://www.izcoalitions.org/presentations/NCIHC-2012/exemptions-DP.pdf.

[50] Washington State Legislature. "Senate Bill Report ESHB 1702." March 26, 2009. http://apps.leg.wa.gov/documents/WSLdocs/2009-10/Pdf/Bill%20Reports/Senate/1703-S.E%20SBR%20HEA%2009.pdf.

[51] McGrath B.J. "Identifying Health and Safety Risks for Childcare Workers," *AAOHN Journal: Official Journal of the American Association of Occupational Health Nurses*. 2007;55:321, August 2007. Available: http://www.ncbi.nlm.nih.gov/pubmed/17847626. August 2012.

[52] Ibid.

[53] American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education. 2011. *Caring for our Children: National Health and Safety Performance Standards; Guidelines for Early Care and Education Programs*. 3rd edition. Elk Grove Village, Illinois: American Academy of Pediatrics. Available: http://nrckids.org/CFOC3. August 2012.

[54] de Perio M.A., et al. "Low Influenza Vaccination Rates Among Child Care Workers in the United States: Assessing Knowledge, Attitudes, and Behaviors," *Journal of Community Health*. 2012; 37:272-281.

[55] Ibid.

[56] Ibid.

[57] Children's Hospital of Philadelphia. "Vaccines for Healthcare and Childcare Workers," *Vaccine Education Center*, March 2012. Available: http://www.chop.edu/service/vaccine-education-center/vaccines-for-adults/healthcare-and-childcare-workers.html. August 2012.

[58] Ibid.

[59] Ibid.

[60] Spokes P.J., Ferson M.J., Ressler K. "Staff Immunization: Policy and Practice in Child Care," Journal of Pediatrics and Child Health. 2011; 47:530-534.

[61] Centers for Disease Control and Prevention. "Meningococcal Disease: Help Prevent It," April 2012. Available: http://www.cdc.gov/features/meningococcal/. August 2012.

[62] Texas Department of State Health Services. "Meningococcal Invasive," January 2012. Available: http://www.dshs.state.tx.us/idcu/disease/meningococcal_invasive/. August 2012.

[63] Centers for Disease Control and Prevention. "Updated Recommendations for Use of Meningococcal Conjugate Vaccines — Advisory Committee on Immunization Practices (ACIP), 2010" *Morbidity and Mortality Weekly Report*, January 28, 2011 / 60(03); 72-76. Available: www.cdc.gov/mmwr/preview/mmwrhtml/mm6003a3.htm. August 2012.

[64] Texas Department of State Health Services. "Obtaining Vaccine: Know More About Your College Vaccine Requirements," 2012. Available: http://collegevaccinerequirements.com/vaccineinfo.php. August 2012.

[65] U.S. Department of Health and Human Services. "Overview of the Uninsured in the United States: A Summary of the 2011 Current Population Survey," *ASPE Issue Brief*. September 2011. Available: http://aspe.hhs.gov/health/reports/2011/CPSHealthIns2011/ib.pdf. August 2012.

[66] Texas Higher Education Coordinating Board. 2011 public and private first-time enrollment data according to age group. August 2012

[67] He Q, Mertsola J. "Factors Contributing to Pertussis Resurgence," *Future Microbiology*, 2008 June;3:329-39..
[68] Centers for Disease Control and Prevention (CDC), "Pertussis (Whooping Cough) – What You Need To Know," July 3, 2012. Available: http://www.cdc.gov/features/pertussis/. August 2012.

[69] Centers for Disease Control and Prevention (CDC), "Pertussis (Whooping Cough): Outbreaks." 18 July 2012. Available: http://www.cdc.gov/pertussis/outbreaks.html/. August 2012.

[70] Ibid.

[71] Texas Department of State Health Services. "Pertussis Update 2012." Infectious Disease Control Unit. August 3, 2012. Available: http://www.dshs.state.tx.us/IDCU/disease/pertussis/Pertussis-Update-2012.doc. August 2012.

[72] Centers for Disease Control and Prevention. "Tdap for Pregnant Women: Information for Providers." June 2012. Available: http://www.cdc.gov/vaccines/vpd-vac/pertussis/tdap-pregnancy-hcp.htm#cocooning. August 2012.

[73] Ibid.

[734] Texas Department of State Health Services. "Pertussis Cocooning Handbook. A physician's guide to successful pertussis prevention." August 2011. Available: http://www.preventpertussis.org/provider/tools_resources.php. August 2012.

RESOURCES

For more information on immunization, please visit the following Websites:

American Academy of Pediatrics
http://www2.aap.org/immunization/

Center for Vaccine Awareness and Research at Texas Children's Hospital
http://www.texaschildrens.org/vaccine/

Centers for Disease Control and Prevention: Vaccines and Immunizations
http://www.cdc.gov/vaccines/

College Vaccine Requirements
http://www.CollegeVaccineRequirements.com/

Every Child By Two
http://www.ecbt.org/

ImmTrac: Immunization Information System for Texas
http://www.dshs.state.tx.us/immunize/immtrac/default.shtm

Immunization Action Coalition: Vaccination Information for Healthcare Professionals and the Public
http://www.immunize.org/

Immunization Branch, Texas Department of State Health Services
http://www.dshs.state.tx.us/immunize/

The Immunization Partnership
http://www.immunizeUSA.org/

National Network for Immunization Information (NNii)
http://www.immunizationinfo.org/

PKIDs (Parents of Kids with Infectious Diseases)
http://www.pkids.org/

Texas Immunization Stakeholder Working Group (TISWG)
http://www.dshs.state.tx.us/immunize/partners/tiswg.shtm

Texas Vaccines for Children Program
http://www.dshs.state.tx.us/immunize/tvfc/default.shtm

Vaccinate Your Baby
http://www.vaccinateyourbaby.org/

The Vaccine Education Center at The Children's Hospital of Philadelphia
http://www.chop.edu/service/vaccine-education-center/home.html

For online copies of this report, visit The Immunization Partnership's website at www.immunizeUSA.org.

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PARTNERSHIP

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OUR VISION

A community free from
vaccine-preventable diseases

OUR MISSION

To eradicate vaccine-preventable diseases by educating the community, advocating evidence-based public policy and promoting immunization best practices.

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