



**TEXAS**  
**Health and Human  
Services**

# **Human Papillomavirus (HPV) Strategic Plan**

**As Required By  
Senate Bill 200, Section 2.32, 84<sup>th</sup> Legislature, Regular Session, 2015**

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**Health and Human Services Commission  
And  
Department of State Health Services  
December 2016**

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## Executive Summary

Senate Bill (S.B.) 200, Section 2.32, 84<sup>th</sup> Legislature, 2015, directs the Health and Human Services Commission (HHSC) to develop a strategic plan to significantly reduce morbidity and mortality from human papillomavirus (HPV) associated cancer. In developing the strategic plan, HHSC collaborated with the Department of State Health Services (DSHS), the Cancer Prevention and Research Institute of Texas (CPRIT), and other interested stakeholders. The statute requires in developing the strategic plan, the DSHS shall:

- Identify barriers to effective prevention, screening, and treatment for HPV-associated cancer, including specific barriers affecting providers and patients;
- Identify methods, other than a mandate, to increase the number of people vaccinated against HPV;
- Identify methods to increase use of evidence-based screening to enhance the number of people screened regularly for HPV-associated cancer;
- Review current technologies and best practices for HPV-associated cancer screening;
- Review technology available to diagnose and prevent infection by HPV;
- Develop methods for creating partnerships with public and private entities to increase awareness of HPV-associated cancer and of the importance of vaccination education and regular screening;
- Review current prevention, screening, treatment, and related activities in Texas and identify areas in which the services for those activities are lacking;
- Estimate the annual direct and indirect state health care costs attributable to HPV-associated cancers;
- Identify actions necessary to increase vaccination and screening rates and reduce the morbidity and mortality from HPV-associated cancer and establish a schedule for implementing those actions; and
- Make recommendations to the legislature on policy changes and funding needed to implement the strategic plan.

This report provides background on HPV, including HPV types and associated cancers. Over the years, there have been several HPV prevention plans developed. In 2006, DSHS developed a Texas Cervical Cancer Strategic Plan, and in 2012, CPRIT developed the Texas Cancer Plan<sup>1</sup> outlining comprehensive goals, objectives, and strategies for fighting against all cancers in Texas.

Additionally, DSHS develops annual tactical plans to promote the importance of HPV vaccine and increase vaccination coverage rates. The plans identify strategies and tactics to increase awareness and utilization of the vaccine, including increasing stakeholder and partner collaboration, developing and launching public awareness campaigns promoting HPV vaccine as

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<sup>1</sup> [http://www.cprit.state.tx.us/images/uploads/tcp2012\\_web\\_v2a.pdf](http://www.cprit.state.tx.us/images/uploads/tcp2012_web_v2a.pdf).

cancer prevention, and expanding the Adult Safety Net vaccine formulary to offer the HPV vaccine to uninsured adults age 19 and older.

This report provides background on current prevention, screening and diagnosis, and treatment options for HPV and HPV-associated cancers, and outlines strategies for increasing prevention, screening and diagnosis, and treatments throughout the state. The report also discusses current public awareness efforts and strategies for increasing these efforts in coordination with the prevention and treatment strategies identified.

## **Introduction**

HPV is the most common sexually transmitted infection (STI). According to the Centers for Disease Control and Prevention (CDC), there are about 79 million Americans currently infected with HPV, and about 14 million new infections occur each year.<sup>2</sup>

HPV is spread through sexual contact with someone who has the virus. HPV is not transmitted through secretions; rather, it is transmitted through contact with infected skin or mucosal surfaces.<sup>3</sup> HPV can be passed even when an infected person has no signs or symptoms. Symptoms can develop years after initial infection, making it hard to know when the virus was contracted.

Although the incidence of HPV is high, most infections resolve spontaneously without treatment. However, a small proportion of people become persistently infected. Persistent (chronic) infection is the most important risk factor for developing HPV-associated cancers. The CDC estimates that approximately 30,700 HPV-associated cancers are diagnosed annually in the U.S.,<sup>4</sup> and according to the Texas Cancer Registry, 2,256 of these occur in Texas.<sup>5</sup>

There are more than 150 types of HPV, about 40 of which can infect human mucosal surfaces. Infection with one type of HPV does not prevent infection with another type. Of infected people, between 5 and 30 percent are infected with multiple types of HPV.

HPV types fall into two categories: low-risk HPVs, which do not cause cancer but can cause skin warts, and high-risk HPVs, which can cause cancer. About a dozen [high-risk HPV](#) types have been identified. Two of these, types 16 and 18, are responsible for the majority of HPV-associated cancers, which include:

- Cervical Cancer – Virtually all cases of cervical cancer are caused by HPV. Two HPV types, 16 and 18, are responsible for about 70 percent of all cases.
- Anal Cancer – About 95 percent of anal cancers are caused by HPV, most by HPV type 16.

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<sup>2</sup> CDC: <http://www.cdc.gov/STD/HPV/STDFact-HPV.htm>, accessed November 15, 2016

<sup>3</sup> Mucosal surfaces are moist surfaces that line organs and body parts that open to the outside.

<sup>4</sup> CDC's MMWR, July 8, 2016: <http://www.cdc.gov/mmwr/volumes/65/wr/mm6526a1.htm>

<sup>5</sup> The Texas Cancer Registry is a program of the Texas Department of State Health Services.

- Oropharyngeal Cancers (cancers of the soft palate, base of the tongue, and tonsils) – About 70 percent of oropharyngeal cancers are caused by HPV, more than half by HPV type 16.
- Other Cancers – HPV causes about 70 percent of vaginal and vulvar cancers, and 60 percent of penile cancers.<sup>6</sup>

While sexual contact is the most common form of HPV transmission, it can also be spread from mother to child during childbirth, causing recurrent respiratory papillomatosis (RRP), also known as juvenile papillomatosis. With RRP, non-cancerous tumors grow in the respiratory track, causing difficulty with breathing, hoarseness, and chronic coughing. The tumors can be surgically removed, but tend to grow back requiring repeated surgeries that may lead to a build-up of scar tissue. RRP is caused by HPV types 6 and 11.<sup>7</sup>

Routine screening with Pap testing<sup>8</sup> and the HPV vaccination are effective for preventing HPV and HPV-associated cancers. Condoms are also effective in preventing HPV. However, HPV can still be spread through contact with areas of the body not covered by a condom.

### **State Health Care Costs**

The true burden of a disease on individuals and society cannot be adequately quantified. Pain and suffering, for example, do not have monetary values. However, the burden of a disease can be quantified in terms of morbidity, mortality, and costs for treatment, as well as indirect costs such as lost wages.

#### *Direct Costs*

Cases of HPV-associated cancer in Texas were identified by Medicaid ICD-9-CM diagnostic codes.<sup>9</sup> Direct costs were calculated using diagnosis and treatment claims, and adjusted by the percent of cancer cases per type. In fiscal year 2013, the total direct cost to the State of Texas from HPV-associated cancers amounted to \$77.7 million, including \$51.4 million for diagnosis

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<sup>6</sup> Centers for Disease Control and Prevention. Human papillomavirus-associated cancers - United States, 2004-2008. *MMWR Morb Mortal Wkly Rep.* 2012;61:258-61; Lowy DR, Schiller JT. Reducing HPV-associated cancer globally. *Cancer Prev Res (Phila).* 2012;5(1):18-23; Chaturvedi AK, Engels EA, Pfeiffer RM, Hernandez BY, Xiao W, Kim E, et al. Human papillomavirus and rising oropharyngeal cancer incidence in the United States. *J Clin Oncol.* 2011;29(32):4294-301; Gillison ML, Chaturvedi AK, Lowy DR. HPV prophylactic vaccines and the potential prevention of noncervical cancers in both men and women. *Cancer.* 2008;113(10 Suppl):3036-46.

<sup>7</sup> *Ibid.*

<sup>8</sup> A test in which cells are taken from the cervix and examined under a microscope for abnormalities that may point to cervical cancer. It is also known as a Pap smear.

<sup>9</sup> ICD-9-CM refers to the International Classification of Diseases, Ninth Revision, Clinical Modification diagnostic codes, which are used to record patient symptoms and diagnoses for the purposes of claims reimbursements and clinical research.

and treatments<sup>10</sup> and \$26.3 million for costs associated with consequences from treatment<sup>11</sup> (see Appendix A: Figure 1).

### *Indirect Costs*

Indirect costs were quantified using present value of lifetime earnings (PVLE) lost due to cancer mortality.<sup>12</sup> PVLE is the product of the number of deaths times the expected value of an individual's future earnings, taking age and life expectancy into account.<sup>13</sup> In fiscal year 2013, there were 362 deaths from cervical cancer in Texas (see Appendix A: Figure 2), nearly three-quarters of which occurred in women under age 65, with the highest rates occurring in women ages 45-64. Losses per death were \$543,277, which amounts to a total loss of \$196.6 million to the economy. The deaths to younger women represented 98 percent of losses in productivity.

### **Prevention**

Because the majority of sexually active people are at risk of HPV infection, it is important to consider preventative measures that can be taken at the state, local, and individual level to decrease rates of infection.

#### *Sexual Risk Avoidance Education*

The most effective way to prevent HPV, HPV-associated cancers, and other STIs is to completely avoid risky sexual behavior. The HHSC Abstinence Education Program is a state and federally funded program that encourages the implementation of abstinence education programs in order to delay sexual activity among teenagers. In Fiscal Year 2015, 8,864 youth were served by program contractors.

#### *HPV Vaccine*

Safe and effective HPV vaccines are available to protect both males and females. The CDC's Advisory Committee on Immunization Practices (ACIP) recommends that all boys and girls ages 11 to 12 be vaccinated.<sup>14</sup> The vaccine is administered as a three-dose series, with the second dose administered at least one to two months after the first dose, and the third dose at least six months after the first dose. Catch-up vaccine is recommended for males through age 21 and females through age 26 who have not been fully vaccinated.

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<sup>10</sup> Diagnostic and treatment procedures include pre-operative exams, chemotherapy, radiotherapy, surgery, and other treatments.

<sup>11</sup> Consequences include postoperative infections, effects of radiation, hemorrhaging, anemia, and rehabilitation procedures.

<sup>12</sup> Max W, Rice DP, Sung HY, Michel M, Breuer W, Zhang X. The economic burden of gynecologic cancers in California, 1998. 2003. *Gynecol Oncol*.88(2):96-103.

<sup>13</sup> Max W, Rice DP, Michel M, Sung H-Y. Methodology for estimating the present value of lifetime earnings. San Francisco: Univ. of California, San Francisco, Institute for Health and Aging, 2001.

<sup>14</sup> HPV vaccine recommendations by the Advisory Committee on Immunization Practices  
<http://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hpv.html>

The following vaccines are licensed by the U.S. Food & Drug Administration (FDA):

- Bivalent vaccine, HPV2 (Cervarix) – protects against HPV types 16 and 18. It is for use in females only.
- Quadrivalent vaccine, HPV4 (Gardasil) – protects against HPV types 16 and 18, as well as types 6 and 11. It has also been shown to protect against HPV-associated cancers. It is for use in both males and females.
- 9-valent vaccine, HPV9 (Gardasil 9) – protects against the same cancers and genital warts as HPV4, plus five additional cancer-causing types: 31, 33, 45, 52, and 58 (together these cause 20 percent of cervical cancers).<sup>15</sup> It is for use in both males and females.

It is important to note that the HPV vaccine is not a required vaccine for students as specified in the Texas Education Code, Section 38.001.<sup>16</sup> Additionally, the Texas Family Code, Section 151.001 provides the parent of a child with the right to consent to the child's medical and dental care, and psychiatric, psychological, and surgical treatment. A child may only consent to their own immunization if the child is pregnant or is the parent of a child and has actual custody of that child, and if the CDC recommends or authorizes the initial dose of an immunization for that disease to be administered before seven years of age.<sup>17</sup>

### *HPV Vaccine Coverage in Texas*

HPV vaccine coverage levels are measured by the Behavioral Risk Factor Surveillance System (BRFSS) survey and the National Immunization Survey-Teen (NIS-Teen). According to the 2015 Texas BRFSS<sup>18</sup> survey, 13.3 percent of Texas adults ages 18 and older have had at least one dose of the HPV vaccine (19.8 percent of females and 7.0 percent of males). Among ethnic groups, Whites demonstrated the highest rate at 14.5 percent compared to 13.0 percent for Hispanics and 11.2 percent for African Americans. Those with insurance had a higher rate of vaccination at 13.4 percent compared to uninsured individuals at 11.9 percent (see Appendix A, Figure 3). According to the NIS-Teen, approximately 60.1 percent of teen females in Texas received at least one dose of the HPV vaccine, and approximately 41.4 percent of teen males received at least one dose of the HPV vaccine (see Appendix A, Figures 4-8). Additionally,

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<sup>15</sup> HPV9 prevents 90 percent of cervical cancer-causing HPV types, whereas HPV2 and HPV4 prevent 70 percent.

<sup>16</sup> Texas Education Code, Section 38.001, Subsection (a) states that each student shall be fully immunized against diphtheria, rubeola, rubella, mumps, tetanus, and poliomyelitis, except as provided by Texas Education Code, Section 38.001, Subsection (c).

<sup>17</sup> Texas Family Code, Section 32.1011

<sup>18</sup> Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services and Centers for Disease Control <http://healthdata.dshs.texas.gov/HealthRisks/BRFSS>.

DSHS gathers data on county-level coverage among teens as reported by providers<sup>19</sup> (see Appendix A, Figure 9).

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<sup>19</sup> Coverage levels are lower due to incomplete reporting and non-universal participation among providers and children.

## *Education and Accessibility*

DSHS educates the public and makes vaccines available through the following programs:

- Texas Vaccines for Children (TVFC) Program – The [TVFC](#) program provides publicly-purchased vaccines (mostly federally funded), including HPV vaccines, at no cost to providers to immunize eligible children through 18 years. TVFC works to increase vaccine ordering by offering webinars and giving providers customized ordering profiles.
- Adolescent Immunization Awareness Campaign – DSHS promotes vaccinations through annual awareness campaigns targeting parents and providers. Campaigns consist of TV, radio, and online advertising as well as print materials. The campaign promotes all adolescent immunizations, including specific messaging promoting the HPV vaccine as a cancer prevention effort. Campaigns from 2013 to 2016 have generated impressions<sup>20</sup> ranging from 25 to 40 million statewide.
- Provider Education – An HPV vaccine toolkit is currently being developed for distribution to all health care providers in Texas who serve the recommended population. It contains a vaccine clinician fact sheet, strategies for counseling and recommending vaccines to patients, TVFC program information, and [Texas Immunization Registry \(ImmTrac\)](#) recruitment materials.

Other state programs that provide vaccine education to eligible clients include HHSC Healthy Texas Women, Family Planning, Primary Health Care, Texas Medicaid, and CHIP. All of these programs are vital to providing education and counseling to eligible Texans, and are described in greater detail in the following section.

CPRIT supports vaccine education and access through grant awards made to organizations to provide public and provider education and outreach, delivery of vaccines and navigation of the health care system. As of September 2016, CPRIT has awarded 22 grants for over \$23 million. These projects have delivered over 24,000 vaccination services in 6 years. For a list of projects see Appendix B.

In addition to state agency-led efforts, partnering organizations play an important role in educating the public about vaccinations available, including, but not limited to, the University of Texas MD Anderson Cancer Center, the Texas Pediatric Society, Texas Medical Association, and the Immunization Partnership, a statewide coalition of immunization stakeholders.

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<sup>20</sup> Impressions is the measurement of how many times an advertisement is seen or heard by a campaign's targeted audience.

### *Barriers to Vaccine Coverage*

Both the 2014 NIS-Teen and the University of Texas MD Anderson's *HPV Vaccine Uptake in Texas Pediatric Care Settings: 2014-2015 Environmental Scan Report*<sup>21</sup> concur that the greatest barrier to HPV vaccination is a lack of provider recommendation. Only 53 percent of Texas adolescents received a recommendation.<sup>22</sup> This can be attributed to several factors, including:

- Limited provider knowledge of HPV-associated diseases
- Lack of awareness of optimal immune response data (timing of vaccine administration)
- Limited understanding of HPV recommendations (i.e., three-dose series, no STI testing required)
- Limited time to discuss HPV vaccine due to competing priorities

Other factors identified by the University of Texas MD Anderson environmental scan include lack of materials in languages other than English, cost concerns, and complex insurance rules.

### *Methods to Increase Vaccine Coverage*

In order to increase HPV vaccine coverage among the recommended population and address identified barriers to coverage, HHSC and DSHS have identified several strategies:

- Educate clinicians about the best strategies for counseling and recommending vaccines to patients.
- If a vaccination series has been started, the next dose should be scheduled before the patient leaves the office. Reminder/recall strategies could be established to ensure that patients return for all remaining doses.
- Improve the use of ImmTrac's reminder/recall functionality to improve second and third dose rates. The registry's functionality allows providers to check a patient's immunizations against the ACIP schedule and recommend initiation of a new vaccine or completion of a series.

### **Screening and Diagnosis**

Cancer screening is one of the most successful strategies for preventing cancer related morbidity and mortality. Pap test<sup>23</sup> screening has been a very successful prevention tool. Since its introduction over 40 years ago, the incidence of cervical cancer and mortality rates in the U.S. and other high-income countries have decreased by 70 percent.<sup>24</sup> However, improving adherence

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<sup>21</sup> The [HPV Vaccine Uptake in Texas Pediatric Care Settings: 2014-2015 Environmental Scan Report](#) was initiated to determine barriers, facilitators, and best practices associated with HPV vaccination uptake in children between the ages of 9 to 17 in pediatric care settings across Texas.

<sup>22</sup> 2014 NIS-Teen

<sup>23</sup> A test in which cells are taken from the cervix and examined under a microscope for abnormalities that may point to cervical cancer. It is also known as a Pap smear.

<sup>24</sup> Schiffman, M., et al., Human papillomavirus testing in the prevention of cervical cancer. *J Natl Cancer Inst*, 2011. 103(5): p. 368-83; Papanicolaou, G.N., A New Procedure for Staining Vaginal Smears. *Science*, 1942. 95(2469): p. 438-9.

to screening guidelines and expanding access are needed to further reduce cervical cancer morbidity and mortality.

### *Cervical Cancer Screening Guidelines*

It is recommended screening for cervical cancer begin at age 21 and end at age 65. Women between the ages of 21 to 29 should be screened with a Pap test every 3 years, and women between the ages of 30 to 65 should be screened with a Pap test and HPV test every 5 years, or a Pap test alone every 3 years.<sup>25</sup> Annual screening is not recommended because it results in the detection of transient or benign lesions, but does not lead to significant cancer prevention.<sup>26</sup>

### *Challenges to Effective Screening*

Low cervical cancer screening rates and poor health outcomes are strongly linked to socioeconomic, educational, geographic, and racial disparities. Factors that hinder access to timely and routine screenings include:

- Lack of a medical home<sup>27</sup>
- Lack of insurance
- Lack of awareness of screening recommendation
- Cultural, social, and linguistic differences<sup>28</sup>
- Difficulty accessing screening facilities due to distance or lack of transportation

According to the BRFSS, Texas women between the ages of 21 to 65 with lower educational attainment, lower income, or without health insurance are less likely to receive routine Pap testing at recommended intervals. Hispanic or multi-racial women are less likely to be screened on schedule compared to white or black women, and women who are disabled or have limitations affecting daily activities are also less likely to be screened. The regions of the state with the lowest on-schedule screening rates are Tyler, Harlingen, Corpus Christi, and San Antonio (including surrounding counties).<sup>29</sup>

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<sup>25</sup> The American College of Obstetricians and Gynecologists <http://www.acog.org/Patients/FAQs/Cervical-Cancer-Screening>

<sup>26</sup> Saslow D, Solomon D, Lawson HW, Killackey M, Kulasingam S, Cain J, et al. American Cancer Society, American Society for Colposcopy and Cervical Pathology, and American Society for Clinical Pathology Screening Guidelines for the Prevention and Early Detection of Cervical Cancer. *CA: a cancer journal for clinicians*. 2012;62(3):147-72.

<sup>27</sup> Cancer Prevention and Research Institute of Texas. Texas Cancer Plan 2012. Available at [http://www.cprit.state.tx.us/images/uploads/tcp2012\\_web\\_v2a.pdf](http://www.cprit.state.tx.us/images/uploads/tcp2012_web_v2a.pdf). Accessed May 3, 2016.

<sup>28</sup> Texas Behavioral Risk Factor Surveillance System, Texas Department of State Health Services and Centers for Disease Control <http://healthdata.dshs.texas.gov/HealthRisks/BRFSS>.

<sup>29</sup> Ibid.

## *Texas Breast and Cervical Cancer Services (BCCS) Program*

The HHSC BCCS program provides low-income, uninsured and underinsured women access to high-quality breast and cervical cancer screening and diagnostic procedures. The program is a grantee of the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) authorized by the Breast and Cervical Cancer Mortality Prevention Act of 1990, and administered by the CDC.

BCCS provides services through a network of contracts with local health departments, hospitals and hospital districts, Federally Qualified Health Centers (FQHCs), universities, community-based organizations, and nonprofit agencies.

BCCS began in 1991 as a pilot project to provide breast and cervical cancer screenings. In 1998, services were expanded to include biopsies,<sup>30</sup> breast ultrasound,<sup>31</sup> and colposcopy<sup>32</sup> in order to confirm a pre-cancer or cancerous condition. It has provided services to more than 384,000 women during its 25-year history. In order to be eligible for services, women must be 18 years or older, have an income at or below 200 percent of the federal poverty level (FPL), be a Texas resident, and be uninsured or underinsured. BCCS services include:

- Clinical breast exam and mammogram
- Pelvic exam and Pap test
- Further testing to confirm a pre-cancer or cancerous condition
- Treatment for cervical intraepithelial neoplasia (CIN)<sup>33</sup> or pre-cancer including: conization<sup>34</sup> and cryotherapy<sup>35</sup>
- Individualized patient navigation and education
- Access to treatment via Medicaid for Breast and Cervical Cancer (MBCC)<sup>36</sup>

In BCCS's 2016 provider survey, providers reported that the two biggest barriers to patients receiving on-schedule Pap testing were low awareness of the link between HPV and cancer, and cost. One-on-one patient education was reported as being the most common method to address these barriers. Among reminder strategies, providers reported that phone calls were the most effective strategy followed by letters. Email, text, and other methods were less effective.

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<sup>30</sup> A minor surgical procedure in which a small piece of tissue is removed and examined under a microscope.

<sup>31</sup> A test in which sound waves are used to examine internal structures.

<sup>32</sup> Viewing of the cervix, vulva, or vagina under magnification with an instrument called a colposcope.

<sup>33</sup> A term used to describe abnormal changes in the cells of the cervix that are caused by HPV infection. CIN is graded as 1 (low-grade), 2 (moderate), or 3 (high-grade).

<sup>34</sup> A procedure in which a cone-shaped piece of tissue is removed from the cervix.

<sup>35</sup> A freezing technique used to destroy diseased tissue; also known as "cold cauterization."

<sup>36</sup> MBCC is a program administered by the Texas Health and Human Services Commission. It offers breast and cervical cancer treatment to Medicaid-eligible women in Texas.

### *Healthy Texas Women and Family Planning Program*

Screening and diagnostic services are also available through state women's health programs. The Healthy Texas Women (HTW) and Family Planning Program (FPP) provide women's health and family planning services to eligible clients statewide. Program benefits include pregnancy testing and counseling, contraceptive services, sexually transmitted infection services, and immunizations. Both programs include screening tests for cervical cancer as program benefits including Pap tests, HPV testing, and additional labs and exams that may provide early detection.

HTW serves women between the ages of 15 to 44 (minors require parental consent), who are at or below 200 percent FPL, are U.S. citizens or eligible immigrants, and who are not pregnant. FPP serves women and men who are under the age of 64 and are at or below 250 percent FPL. Both programs provide services to eligible clients at little to no cost to the client. To find an HTW or FPP provider in their area, a client can go to [www.HealthyTexasWomen.org](http://www.HealthyTexasWomen.org).

### *Other State Programs*

There are multiple other state programs for Texans to receive preventative health services. For example, the HHSC Primary Health Care Services Program (PHC) helps ensure that Texas residents who do not qualify for other state or federal health care assistance programs have access to primary health care services. Services provided include diagnosis and treatment, emergency medical services, family planning services, health education, preventive health services, and laboratory or other appropriate diagnostic services. Women who are pregnant or think they may be pregnant can access vital prenatal services through the Title V Maternal and Child Health Program or the FPP. Families can learn more about their options at [www.SomedayStartsNow.com](http://www.SomedayStartsNow.com).

A full range of health care services is also available through Texas Medicaid at no cost to the client. Texas Medicaid services include vaccines, Pap tests, and other screening and treatment services. Additionally, CHIP provides health coverage, including HPV vaccines, to uninsured children and youth in families with incomes up to and including 201 percent FPL. Individuals can learn more about what programs they may qualify for at [www.YourTexasBenefits.com](http://www.YourTexasBenefits.com).

CPRIT's Prevention Program provides grants to organizations for the delivery of cancer prevention, early detection and survivorship services to under and uninsured Texans. These include public and provider education and training and as well as clinical services. Clinical services include screenings and diagnostic services for breast, cervical, colorectal and lung cancer, screening for hepatitis B and C, as well as vaccinations, genetic testing and counseling, and survivor care services.

## *Methods to Increase Screening and Diagnostic Services*

In order to increase screening and diagnostic services among Texans and address identified challenges to effective screening, HHSC and DSHS have identified several strategies:

- Increase public education about available state programs that provide screening and diagnostic services for HPV-associated cancers. Outreach efforts can include informational cards, in-office display posters, and digital and social media outreach campaigns and focus on counties identified with low screening rates.
- Increase provider participation in state programs that provide screening and diagnostic services through education and outreach.

## **Treatment**

As with other cancers, treatment for HPV-associated cancers varies by type of cancer and stage (how advanced the cancer is). Early stage tumors are often treated surgically, while advanced tumors may be treated with a combination of therapies including surgery, chemotherapy, and radiation.<sup>37, 38, 39</sup>

Treatments may cause side effects, sometimes immediately or months later. Treatments requiring partial or complete excision of organs may result in severe side effects.<sup>40</sup> Side effects depend on the types of treatment and doses received. Appropriate follow-up care is important to help minimize side effects.

## **Treatment in Texas**

### Cancer Centers

In 2013, approximately 80 percent of newly diagnosed cancer patients in Texas were treated at a cancer center accredited by the American College of Surgeons' Commission on Cancer (CoC).<sup>41</sup> There are 76 CoC-accredited cancer centers in Texas (see Appendix C for the listing).

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<sup>37</sup> <https://www.cancer.gov/about-cancer/treatment/types> accessed 10/4/2016.

<sup>38</sup> Mirghani H, Amen F, Blanchard P, et al. Treatment de-escalation in HPV-positive oropharyngeal carcinoma: Ongoing trials, critical issues and perspectives. *International Journal of Cancer* 2015;136(7):1494-503

<sup>39</sup> Urban D, Corry J, Rischin D. What is the best treatment for patients with human papillomavirus-positive and -negative oropharyngeal cancer? *Cancer* 2014; 120(10):1462-1470.

<sup>40</sup> *Gynecol Oncol.* 2012 Mar;124(3):399-403. doi: 10.1016/j.ygyno.2011.11.034. Epub 2011 Nov 23.

Patient reported late effects of gynecological cancer treatment.

Grover S<sup>1</sup>, Hill-Kayser CE, Vachani C, Hampshire MK, DiLullo GA, Metz JM.

<sup>41</sup> Texas Cancer Registry, Texas Department of State Health Services, October 17, 2016.

Accredited programs provide high-quality cancer treatments coordinated by specialists who have access to multiple tools for improving patient outcomes.<sup>42, 43</sup>

In addition to the CoC-accredited cancer centers, there are four cancer centers in Texas designated by the National Cancer Institute (NCI). The four centers in Texas are:

- The University of Texas MD Anderson Cancer Center, Houston
- The Dan L. Duncan Comprehensive Cancer Center, Baylor College of Medicine, Houston
- The Harold C. Simmons Comprehensive Cancer Center, University of Texas Southwestern Medical Center, Dallas
- The Cancer Therapy and Research Center, University of Texas Health Science Center, San Antonio

Together, the CoC-accredited and NCI-designated cancer centers see the largest volume of cancer patients in Texas.

#### Texas Medicaid

Texas Medicaid covers treatments for cancer. Medicaid cancer treatment services include, but are not limited to, chemotherapy, inpatient hospital stays, radiation treatment, and any drugs that may be beneficial for long-term treatment. Treatments that are considered experimental or investigational are not covered benefits.

While all Medicaid beneficiaries have access to medically necessary covered cancer treatment services, the MBCC program is a program specifically for low-income, uninsured women who have been screened and need active treatment for breast and/or cervical cancer, but would not otherwise be eligible for Medicaid. MBCC recipients receive full Medicaid coverage; services are not limited to the treatment of breast and cervical cancer.

#### Texas CHIP

CHIP also covers cancer treatment, including but not limited to radiation, chemotherapy, and surgery. Treatments that are considered experimental or investigational are not covered benefits.

#### *Barriers to Effective Treatment*

Advances in science and technology have contributed to sustained progress in cancer treatment, resulting in improved survival rates and better quality of life. However, not all Texans are benefitting equally from advancements, including the uninsured and underinsured, racial and ethnic minorities, and people living in rural areas.

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<sup>42</sup> Mirghani H, Amen F, Blanchard P, et al. Treatment de-escalation in HPV-positive oropharyngeal carcinoma: Ongoing trials, critical issues and perspectives. *International Journal of Cancer* 2015;136(7):1494-503

<sup>43</sup> Urban D, Corry J, Rischin D. What is the best treatment for patients with human papillomavirus-positive and -negative oropharyngeal cancer? *Cancer* 2014; 120(10):1462-1470.

Patients who lack access to care, for whatever reason, tend to present in hospitals and emergency facilities with advanced-stage cancers that are more difficult and costly to treat and have greater impacts to quality of life.

### *Methods to Increase Treatment Services*

In order to increase treatment services among Texans and address identified barriers to effective treatment, HHSC and DSHS have identified several strategies:

- Increase public knowledge of services available through the MBCC program using education and outreach efforts. Efforts should help drive clients to program websites where they can learn more about program eligibility, how to apply, and how to find a doctor in their area.
- Increase provider participation in the state Medicaid Program through education and outreach and focus efforts on rural parts of the state and regions with the highest cancer mortality rates.

### **Increasing Public Awareness**

Increasing awareness about HPV-associated cancers and improving prevention efforts requires partnerships between state and local public health departments, private health care providers, professional medical associations, school systems, community-based organizations, and advocacy groups.

The Texas Immunization Stakeholder Working Group (TISWG) was formed in 2004 to strengthen partnerships within the state's multi-disciplinary immunization system and helps implement nationally-identified best practices. The group is comprised of members representing the following:

- HHSC
- Local Health Departments
- Texas Academy of Family Physicians
- Texas Association of Community Health Centers
- Texas Association of Health Plans
- Texas Education Agency
- Texas Hospital Association
- Texas Medical Association
- Texas Nurses Association
- Texas Parent Teacher Association
- Texas Pediatric Society
- Texas Pharmacy Association
- American Congress of Obstetricians and Gynecologists
- Texas Immunization Coalitions
- National Association of Chain Drug Stores
- Vaccine Manufacturers

CPRIT supports vaccine education and access by awarding grants to public and private entities in Texas. Over the past 6 years, CPRIT has funded 22 HPV vaccination projects administered by universities, hospitals, and non-profit organizations (see Appendix B).

The University of Texas MD Anderson Cancer Center collaborates with stakeholders across Texas through its Moon Shots for Cancer program to raise awareness about all cancers, including HPV-associated cancers.<sup>44</sup> Inspired by America's drive a generation ago to put a man on the moon, Moon Shots aims to rapidly and dramatically reduce mortality and suffering from major cancers. Its goal for 2020 is to increase HPV vaccination coverage rates to 80 percent. Among its stakeholders are:

- Texas Medical Association
- Texas Pediatric Society
- Texas Association of Obstetricians and Gynecologists
- Texas Academy of Family Physicians
- The Immunization Partnership
- Harris Health System (LBJ Hospital)
- Federally Qualified Health Centers (including Legacy Clinics in Harris County)

## **Conclusion**

While there are current options available in Texas for the prevention, screening, diagnosis and treatment of HPV and HPV-associated cancers, there are still improvements that can be made to ensure adequate statewide access to these options. HHSC and DSHS are committed to educating the public about these options. While several strategies for increasing vaccination, screening, and treatment rates have been mentioned throughout the report, those listed below have been identified as key for preventing HPV and HPV-associated cancers statewide.

- Improve provider education through increased outreach and training
- Increase client access to programs that provide prevention, screening, diagnostic, and treatment services
- Improve public awareness through public and private partnerships
- Strengthen collaboration among state agencies, professional associations, academic institutions, coalitions, and others interested in reducing HPV-associated cancers in order to leverage resources and improve coordination

In the future, HHSC and DSHS will build upon current efforts for preventing HPV and HPV-associated cancers while also implementing new strategies and methods identified for increasing education and access statewide.

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<sup>44</sup> <https://www.mdanderson.org/cancermoonshots.html>.

## Appendix A: Tables, Maps, and Graphs

**Figure 1: Fiscal Year 2013 Medicaid Costs Associated with Consequences of Cancer Treatment in Texas (HHSC Medicaid)**

HPV-Related Cancers	Number of Cases <sup>45</sup>	Treatment Cost	Adjusted Cost <sup>46</sup>	Consequences Cost <sup>47</sup>	Adjusted Cost
Anus	1,095	\$4,538,176	\$4,129,740	\$1,714,297	\$1,560,011
Rectal	3,649	\$15,253,967	\$13,881,110	\$6,333,531	\$5,763,513
Cervix	6,676	\$15,719,639	\$14,304,871	\$8,286,408	\$7,540,631
Oropharyngeal	6,715	\$23,658,737	\$16,561,116	\$13,448,840	\$9,414,188
Penis	335	\$726,857	\$457,920	\$458,402	\$288,793
Vulva and Vagina	1,353	\$2,969,446	\$2,078,612	\$2,495,159	\$1,746,611
<b>Total</b>	<b>19,823<sup>48</sup></b>		<b>\$51,413,369</b>		<b>\$26,313,747</b>

**Figure 2: Fiscal Year 2013 Cervical Cancer Deaths and Present Value of Life-Time Earnings (PVLE) by Age in Texas (DSHS, Center for Program Coordination and Health Policy)**

Age	Number of Deaths	Total PVLE	PVLE Per Death
Under 24	0	0	0
25-44	87	\$99,920,894	\$1,148,516
45-64	184	\$93,016,541	\$505,525
65-74	48	\$3,378,848	\$70,393
75-84	32	\$339,580	\$10,612
85+	11	\$10,359	\$942
<b>Total</b>	<b>362</b>	<b>\$196,666,222</b>	<b>\$543,277<sup>49</sup></b>

<sup>45</sup> HPV-related cancer cases identified in Medicaid who were diagnosed between 2008 and 2013 to capture the cost of cancer in 2013.

<sup>46</sup> The total Medicaid cost was adjusted by the percent of cancers caused by HPV for each cancer site; Anal = 91%, Rectal = 91%, Cervical = 91%, Oropharyngeal = 70%, Penile = 63%, Vulvar and Vaginal = 70%.

<sup>47</sup> Cost consequences include post-treatment effects such as infections, radiation effects, hemorrhaging, anemia, rehabilitation procedures, and other consequences.

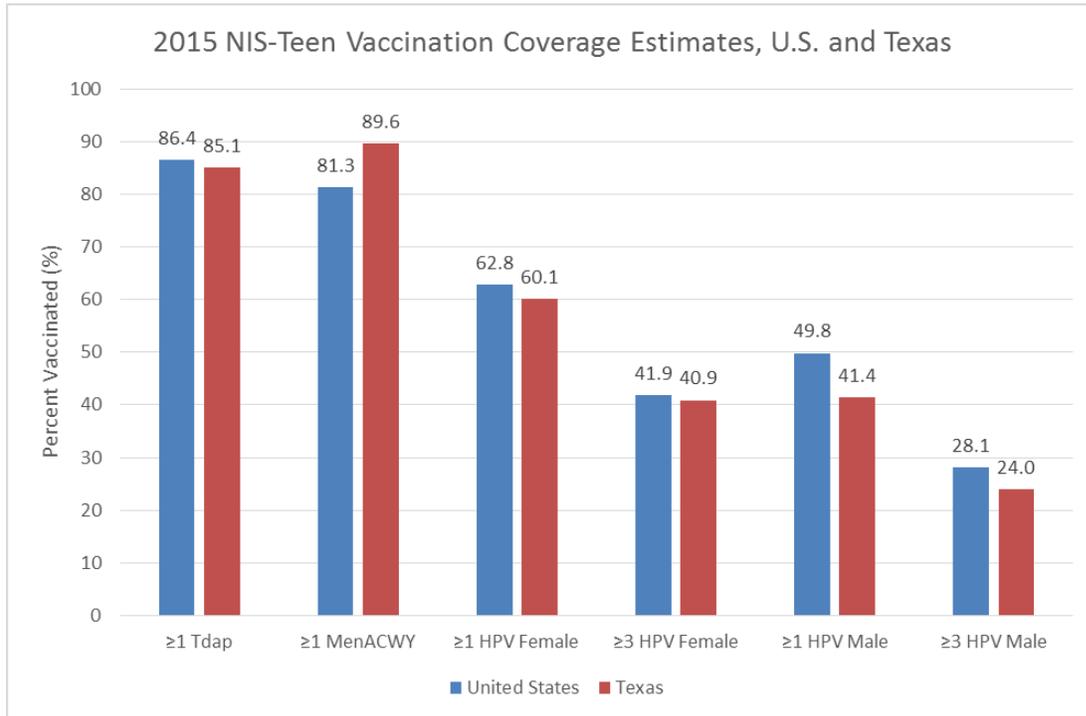
<sup>48</sup> The total number of cases does not represent the total number of clients, as a client can have more than one cancer diagnosis. The total number of clients was 18,308.

<sup>49</sup> Average PLVE per death.

**Figure 3: Response to Question: Have you ever received an HPV vaccination? (Texas Behavioral Risk Factor Surveillance System-2015)**

Demographic Group		Percent
Gender	Male	7.0
	Female	19.8
Age Groups	18-34	23.9
	35-49	1.9
Race/Ethnicity	White Only	14.5
	Black Only	11.2
	Hispanic	13.0
	Other Only/Multiracial	14.3
Education	< High School	3.0
	High School Graduate	17.7
	Some College	19.5
	College Graduate	9.1
Income	<\$25,000	11.6
	\$25,000-\$49,999	14.1
	\$50,000 or more	12.2
Insurance	Has Insurance	13.4
	No Insurance	11.9
Marital Status	Married	7.3
	Not Married	18.9
Employment Status	Employed	9.8
	Not Employed	19.7
Limitation Status	Has Limitation	13.9
	No Limitation	13.2
Disability Status	Has Disability	8.8
	No Disability	9.8

**Figure 4: Comparison of U.S. and Texas Vaccination Coverage Levels for Adolescent Immunizations (2015 National Immunization Survey-Teen)<sup>50</sup>**



For accessible data tables, please see article in *MMWR Weekly* for August 26, 2016 / 65(33);850–858 entitled "National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2015," which is available at:

[https://www.cdc.gov/mmwr/volumes/65/wr/mm6533a4.htm#T3\\_down](https://www.cdc.gov/mmwr/volumes/65/wr/mm6533a4.htm#T3_down)

<sup>50</sup> Tdap is for tetanus, diphtheria, and pertussis; MenACWY is for meningococcal.

**Figure 5: Vaccination Coverage Levels in Texas and U.S. (2015 National Immunization Survey-Teen)**

Vaccine	Texas 2014	Texas 2015	2014-2015 Percentage Point Change (+/-)	U.S. National Average 2015
≥1 dose of tetanus-diphtheria-acellular pertussis (Tdap)	88.2%	85.1%	-3.1	86.4%
≥1 dose of meningococcal conjugate (MenACWY)	88.6%	89.6%	+1.0	81.3%
≥1 dose of human papillomavirus (HPV), females	50.7%	60.1%	+9.4	62.8%
≥3 doses of HPV, females	33.9%	40.9%	+7.0	41.9%
≥1 dose of HPV, males	36.6%	41.4%	+4.8	49.8%
≥3 doses of HPV, males	17.7%	24.0%	+6.3	28.1%

**Figure 6: HPV Coverage by Poverty Status, Texas (2015 National Immunization Survey-Teen)**

HPV Coverage Measure	At or Above Poverty		Below Poverty	
	Females	Males	Females	Males
≥ 1 Dose(s)	54.7%	34.7%	72.2%	52.8%
≥ 3 Doses	36.4%	19.5%	49.3%	30.6%

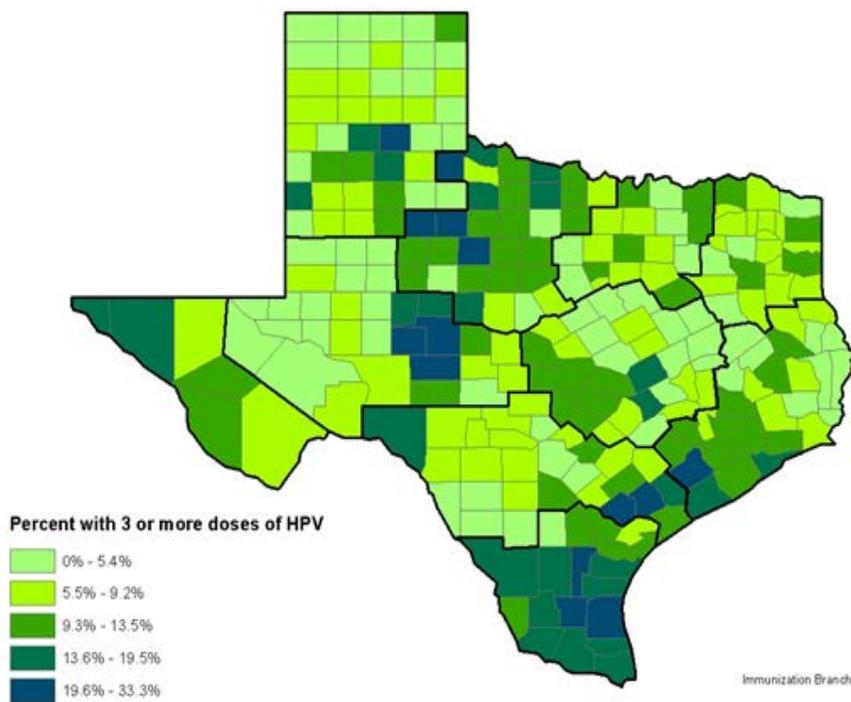
**Figure 7: Up to Three HPV Doses Vaccine Coverage by Race, Texas (2015 National Immunization Survey-Teen)**

<b>Race</b>	<b>Sex</b>	<b>Coverage</b>
White only, non-Hispanic	Female	38.1%
	Male	15.4%
Black only, non-Hispanic	Female	47.4%
	Male	N/A
Hispanic	Female	44.1%
	Male	33.5%

**Figure 8: At Least One HPV Doses Vaccine Coverage by Race, Texas (2015 National Immunization Survey-Teen)**

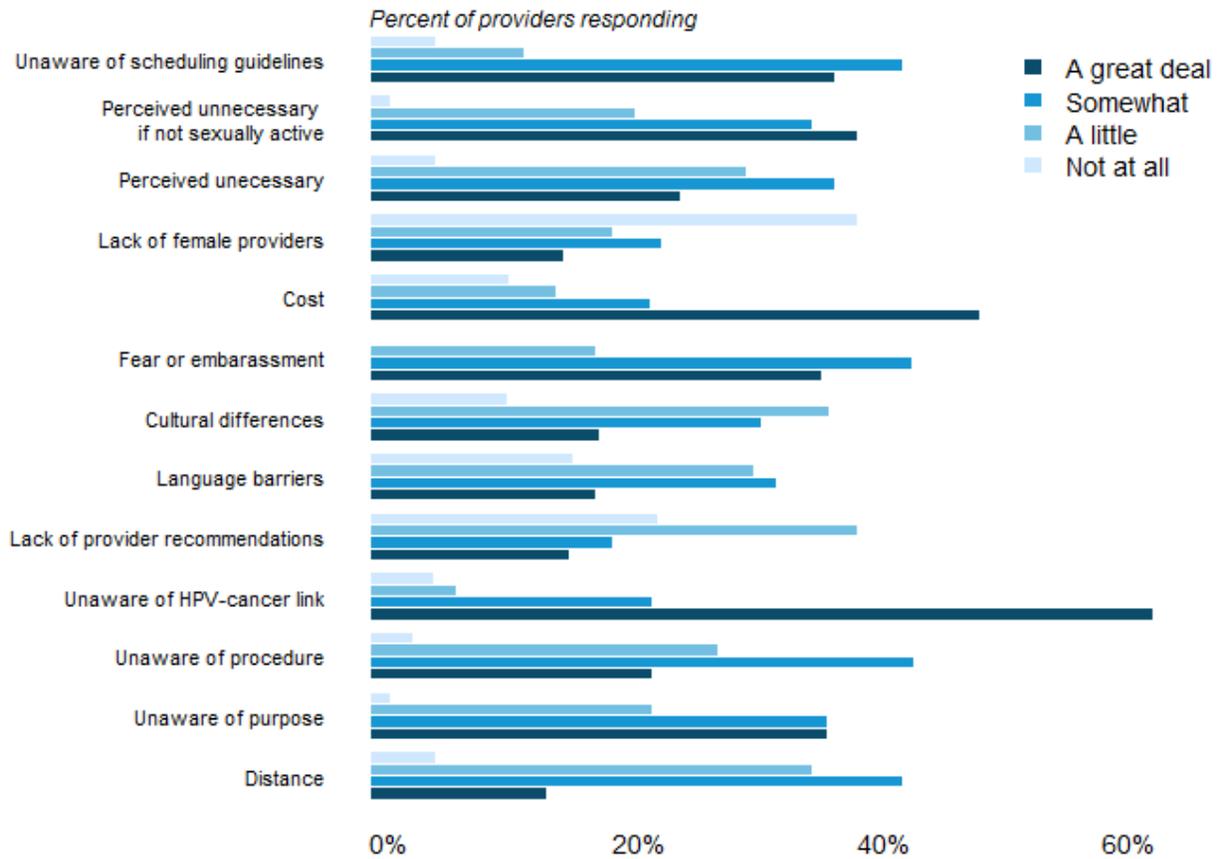
<b>Race</b>	<b>Sex</b>	<b>Coverage</b>
White only, non-Hispanic	Female	55.5%
	Male	29.4%
Black only, non-Hispanic	Female	64.0%
	Male	43.0%
Hispanic	Female	66.1%
	Male	52.8%

**Figure 9: Estimated Coverage with 3 or more doses of HPV among 13 to 17 Year Olds, 2014 (DSHS, Immunization Branch)**



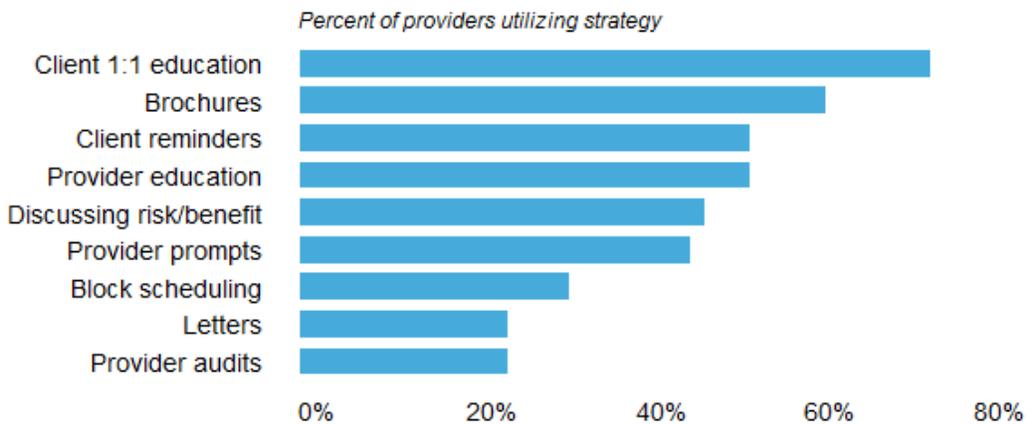
For accessible data, please refer to the CDC data table sources available at:  
<https://www.cdc.gov/vaccines/imz-managers/coverage/nis/teen/data/tables-2014.html>

**Figure 10: Barriers to Pap Testing**



Source: BCCS Provider Survey - Understanding Barriers to Cervical Cancer Screening

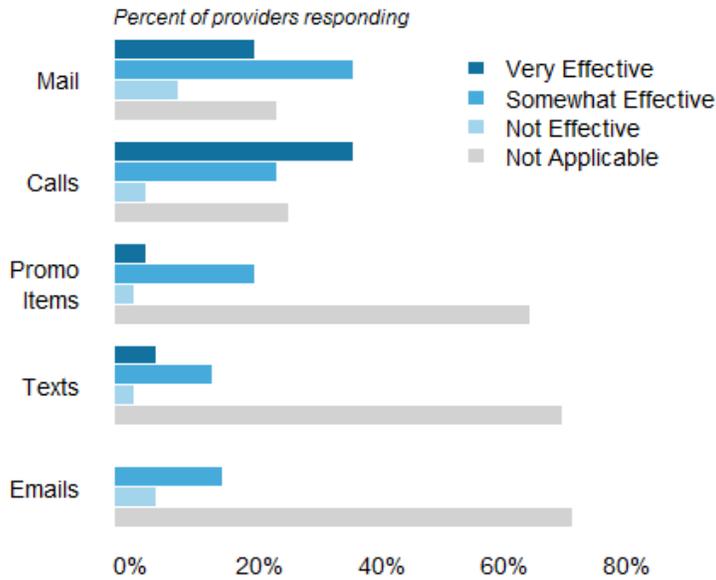
**Figure 11: Utilization of Promotional Strategies for Pap Testing**



Source: BCCS Provider Survey - Understanding Barriers to Cervical Cancer Screening

For accessible data tables, please see the CDC document entitled *Understanding Barriers to Cervical Cancer Screening in Women With Access to Care, Behavioral Risk Factor Surveillance System, 2014*, available at: [https://www.cdc.gov/pcd/issues/2016/16\\_0225.htm](https://www.cdc.gov/pcd/issues/2016/16_0225.htm)

**Figure 12: Perceived Effectiveness of Reminder Strategies for Pap Testing**



Source: BCCS Provider Survey - Understanding Barriers to Cervical Cancer Screening

For accessible data tables, please see the CDC document entitled *Understanding Barriers to Cervical Cancer Screening in Women With Access to Care, Behavioral Risk Factor Surveillance System, 2014*, available at: [https://www.cdc.gov/pcd/issues/2016/16\\_0225.htm](https://www.cdc.gov/pcd/issues/2016/16_0225.htm)

## Appendix B: CPRIT-Funded HPV Vaccination Projects as of September 2016

<b>Project</b>	<b>Grantee</b>	<b>Amount</b>
An Intervention Promoting HPV Vaccination in Safety-net Clinics	The University of Texas Southwestern Medical Center at Dallas	\$299,999
Cancer Prevention in the Asian American Community of Greater Houston	Asian American Health Coalition of Greater Houston, Inc., dba Hope Clinic	\$288,395
Increasing Breast, Cervical, and Colorectal Cancer Screening and HPV Vaccination among Underserved Texans: A Collaboration with the United Way's 2-1-1 Program	The University of Texas Health Science Center at Houston	\$961,021
Culturally sensitive HPV vaccine education in Tarrant County	University of North Texas Health Science Center at Fort Worth	\$298,148
A peer education and outreach program to prevent cervical cancer among Latina mothers and daughters living in Texas-Mexico border communities	The University of Texas Health Science Center at San Antonio	\$295,859
Eliminating Cancer Disparities in the Multicultural Community of Southwest Houston	Asian American Health Coalition of Greater Houston, Inc., dba Hope Clinic	\$965,881
Increasing Breast, Cervical, and Colon Cancer Screening and increasing HPV vaccination among Underserved Texans: A collaboration with the United Way's 211 Program	The University of Texas Health Science Center at Houston	\$2,699,988
Prenatal education and postpartum administration of HPV vaccine: Strategies to increase initiation and series completion among low income women	UT Medical Branch at Galveston	\$1,224,025
Educating Hispanic adolescents and their families on cervical cancer prevention and HPV vaccination in community and clinic settings	The University of Texas Health Science Center at San Antonio	\$149,985
Multi-component Interventions to Increase HPV Vaccination in a Network of Pediatric Clinics	The University of Texas Health Science Center at Houston	\$1,495,388

Eliminating Cancer Disparities in Medically Underserved Immigrant and Refugee Populations in Houston Texas	Asian American Health Coalition of Greater Houston, Inc., dba Hope Clinic	\$1,496,840
Increasing HPV Vaccinations in Harris and Jefferson Counties Using Combined Evidence-Based Approaches in a Federally Qualified Health Center	Legacy Community Health Services	\$1,500,000
Tiempo de vacunarte! Time to get vaccinated!	Texas Tech University Health Sciences Center at El Paso	\$1,499,195
A multi-pronged approach to increase HPV vaccination rates among adolescents between the ages of 9 to 17 from Galveston and Brazoria Counties	The University of Texas Medical Branch at Galveston	\$1,406,919
Maximizing opportunities for HPV vaccination in the Golden Triangle	The University of Texas Medical Branch at Galveston	\$1,409,909
Using Best Practices to Promote HPV vaccination in Rural Primary Care Settings	The University of Texas Health Science Center at San Antonio	\$1,295,493
A community based program to increase breast and cervical cancer screening and HPV vaccination to reduce the impact of breast and cervical cancer among Latinas	The University of Texas Health Science Center at Houston	\$1,387,005
Dissemination of an Evidence-Based HPV Vaccination Intervention in Community and Clinical Settings	The University of Texas Health Science Center at Houston	\$299,778
Postpartum administration of HPV vaccine: Strategies to increase initiation and series completion among low income women across Southeast Texas	The University of Texas Medical Branch at Galveston	\$1,496,111
Leveraging a Community Network for Cancer Prevention to Increase HPV Vaccine Uptake and Completion among Pediatric Patients in a Safety Net Healthcare Setting	Baylor College of Medicine	\$1,161,015
Promoting HPV vaccination among Hispanic adolescents and young adults using Health Care System-Based Interventions and Community Outreach	The University of Texas Health Science Center at San Antonio	\$1,302,955

School-Based Human Papillomavirus  
Vaccination Program in the Lower Rio  
Grande Valley

The University of Texas Medical Branch at  
Galveston

\$747,727

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**TOTAL**

**\$23,681,636**

## **Appendix C: Commission on Cancer Accredited Cancer Programs**

### **Amarillo VA Health Care System**

6010 Amarillo Boulevard, West (105 AR), Amarillo, TX 79106  
Veterans Affairs Cancer Program  
Phone (806) 355-9703 | [www.amarillo.va.gov](http://www.amarillo.va.gov)

### **Audie L. Murphy Memorial Veterans Hospital**

7400 Merton Minter Boulevard, San Antonio, TX 78229-4404  
Veterans Affairs Cancer Program  
Phone (210) 617-5300 | [www.vasthcs.med.va.gov](http://www.vasthcs.med.va.gov)

### **Baptist Health System**

215 East Quincy Suite 200, One Lexington Medical Building, San Antonio, TX 78215  
Comprehensive Community Cancer Program  
Phone (210) 297-1000 | [www.baptisthealthsystem.com](http://www.baptisthealthsystem.com)

### **Baptist Hospitals of Southeast Texas**

Baptist Cancer Center, 3080 College Street, Beaumont, TX 77701-4689  
Comprehensive Community Cancer Program  
Phone (409) 212-5922 | [www.bhset.net](http://www.bhset.net)

### **Baylor All Saints Medical Center at Fort Worth**

1400 Eighth Avenue, Fort Worth, TX 76104-4192  
Comprehensive Community Cancer Program  
Phone (800) 422-9567 | [www.BaylorHealth.com](http://www.BaylorHealth.com)

### **Baylor Medical Center at Grapevine**

1650 West College Street, Grapevine, TX 76051-1650  
Community Cancer Program  
Phone (800) 422-9567 | [www.bhcs.com](http://www.bhcs.com)

### **Baylor Medical Center at Waxahachie**

2400 North I-35E, Waxahachie, TX 75165-2275  
Community Cancer Program  
Phone (469) 843-6049 | [www.bhcs.com](http://www.bhcs.com)

### **Baylor Regional Medical Center**

4700 Alliance Boulevard, Plano, TX 75093  
Comprehensive Community Cancer Program  
Phone (469) 814-2000 | [www.baylorhealth.com](http://www.baylorhealth.com)

### **Baylor Scott & White Medical Center - Carrollton**

4343 N. Josey Lane, Carrollton, TX 75010  
Community Cancer Program  
Phone (972) 394-2236 | [www.baylorhealth.com](http://www.baylorhealth.com)

### **Baylor Scott & White Medical Center - Garland**

2300 Marie Curie Boulevard, Garland, TX 75042-5706  
Community Cancer Program  
Phone (800) 422-9567 | [www.bhcs.com](http://www.bhcs.com)

### **Baylor Scott & White Medical Center- Irving**

1901 North MacArthur Boulevard, Irving, TX 75061  
Community Cancer Program

Phone (800) 422-9567 | [www.baylorhealth.com](http://www.baylorhealth.com)

**Baylor University Medical Center**

3500 Gaston Avenue, Dallas, TX 75246-2088  
Academic Comprehensive Cancer Program  
Phone (214) 820-3535 | [www.baylorhealth.com/dallascancer](http://www.baylorhealth.com/dallascancer)

**Bayshore Medical Center**

4000 Spencer Highway, Pasadena, TX 77504  
Community Cancer Program  
Phone (800) 979-3627 | [www.bayshoremedical.com](http://www.bayshoremedical.com)

**Brooke Army Medical Center**

3551 Roger Brooke Drive, Fort Sam Houston, TX 78234-6200  
Academic Comprehensive Cancer Program  
Phone (210) 916-4141 | <http://www.sammc.amedd.army.mil/>

**BSA Health System**

1600 Wallace Boulevard, Amarillo, TX 79106  
Comprehensive Community Cancer Program  
Phone (806) 212-2000 | [www.bsahs.org](http://www.bsahs.org)

**Carl R. Darnall Army Medical Center**

36065 Santa Fe Avenue, Fort Hood, TX 76544-5095  
Community Cancer Program  
Phone (254) 288-8001 | [www.hood-meddac.army.mil](http://www.hood-meddac.army.mil)

**CHI St. Luke's Health Memorial**

1201 West Frank Avenue, P O Box 1447, Lufkin, TX 75902-1447  
Comprehensive Community Cancer Program  
Phone (936) 634-8111 | [www.memorialhealth.org](http://www.memorialhealth.org)

**CHI St. Luke's Health-Baylor St. Luke's Medical Center**

6720 Bertner Avenue, Houston, TX 77030-2697  
Academic Comprehensive Cancer Program  
Phone (832) 355-3627 | <http://www.stlukeshouston.com/>

**Christus Hospital-St. Elizabeth and St. Mary**

2830 Calder Avenue, Beaumont, TX 77702-1809  
Comprehensive Community Cancer Program  
Phone (409) 892-7171 | [www.christushospital.org](http://www.christushospital.org)

**Christus Spohn Hospital Shoreline**

600 Elizabeth Street, Corpus Christi, TX 78404-2235  
Comprehensive Community Cancer Program  
Phone (361) 881-3000 | [www.christusspohn.org](http://www.christusspohn.org)

**CHRISTUS St. Michael Health System**

2600 St. Michael Drive, Texarkana, TX 75503-2372  
Comprehensive Community Cancer Program  
Phone (903) 614-1000 | [www.christusstmichael.org](http://www.christusstmichael.org)

**Citizens Medical Center**

2701 Hospital Drive, Victoria, TX 77901-5749  
Comprehensive Community Cancer Program  
Phone (361) 573-9181 | [www.citizensmedicalcenter.org](http://www.citizensmedicalcenter.org)

**Clear Lake Regional Medical Center**

500 Medical Center Boulevard, Webster, TX 77598-4286  
Comprehensive Community Cancer Program  
Phone (281) 332-2511 | [www.clearlakermc.com](http://www.clearlakermc.com)

**Dell Children's Medical Center of Central Texas**

4900 Mueller Boulevard, Austin, TX 78723  
Integrated Network Cancer Program  
Phone (512) 324-0000 | [www.dellchildrens.net](http://www.dellchildrens.net)

**Doctors Hospital at Renaissance**

5501 S. McColl Road, Edinburg, TX 78539  
Comprehensive Community Cancer Program  
Phone (956) 362-8677 | <http://www.dhr-rgv.com/>

**Doctors Hospital of Laredo**

10700 McPherson Road, Laredo, TX 78045  
Community Cancer Program  
Phone (956) 523-2000 | [www.doctorshosplaredo.com](http://www.doctorshosplaredo.com)

**Harris County Hospital District**

1504 Taub Loop, Houston, TX 77030  
Academic Comprehensive Cancer Program  
Phone (713) 873-2000 | [www.harrishealth.org](http://www.harrishealth.org)

**Hillcrest Baptist Medical Center**

100 Hillcrest Medical Blvd, Waco, TX 76712  
Community Cancer Program  
Phone (254) 202-2000 | [www.sw.org/location/waco-hillcrest-medical-center](http://www.sw.org/location/waco-hillcrest-medical-center)

**Houston Methodist St. John Hospital**

18300 St. John Drive, Nassau Bay, TX 77058  
Community Cancer Program  
Phone (281) 333-5503 | [www.ChristusStJohn.org](http://www.ChristusStJohn.org)

**Houston Methodist Sugar Land Hospital**

16655 Southwest Freeway, Sugar Land, TX 77479-2343  
Comprehensive Community Cancer Program  
Phone (281) 274-8000 | [www.houstonmethodist.org](http://www.houstonmethodist.org)

**JPS Health Network**

John Peter Smith Hospital, 1500 South Main Street, Fort Worth, TX 76104-4941  
Comprehensive Community Cancer Program  
Phone (817) 921-3431 | [www.jpshealthnet.org](http://www.jpshealthnet.org)

**Kelsey-Seybold Clinic**

2727 West Holcombe Boulevard, Houston, TX 77025-1669  
Freestanding Cancer Center Program  
Phone (713) 442-0000 | [www.kelsey-seybold.com](http://www.kelsey-seybold.com)

**Las Palmas Del Sol Healthcare**

10301 Gateway west, El Paso, TX 79925  
Comprehensive Community Cancer Program  
Phone (915) 595-9200 | [www.laspalmasdelsolhealthcare.com](http://www.laspalmasdelsolhealthcare.com)

**Medical Center Hospital**

500 West Fourth Street, Odessa, TX 79761-5059  
Comprehensive Community Cancer Program  
Phone (432) 640-4000 | [www.mchodessa.com](http://www.mchodessa.com)

**Medical Center of Arlington**

3301 Matlock Road, Arlington, TX 76015-2998  
Community Cancer Program  
Phone (817) 465-3241 | [www.medicalcenterarlington.com](http://www.medicalcenterarlington.com)

**Medical Center of Lewisville**

500 West Main Street, Lewisville, TX 75067-3699  
Community Cancer Program  
Phone (972) 420-1000 | [www.lewisvillemedical.com](http://www.lewisvillemedical.com)

**Medical Center of Plano**

3901 West 15th Street, Plano, TX 75075-7799  
Comprehensive Community Cancer Program  
Phone (972) 596-6800 | [www.themedicalcenterofplano.com](http://www.themedicalcenterofplano.com)

**Medical City Dallas Hospital**

7777 Forest Lane, Dallas, TX 75230-2598  
Comprehensive Community Cancer Program  
Phone (972) 566-7000 | [www.medicalcityhospital.com](http://www.medicalcityhospital.com)

**Memorial Hermann Health System**

909 Frostwood, Suite 2.205, Houston, TX 77072  
Integrated Network Cancer Program  
Phone (713) 338-5971 | [www.memorialhermann.org](http://www.memorialhermann.org)

**Methodist Dallas Medical Center**

1441 North Beckley Avenue, Dallas, TX 75203  
Academic Comprehensive Cancer Program  
Phone (214) 947-8181 | [www.methodisthealthsystem.org](http://www.methodisthealthsystem.org)

**Methodist Healthcare System**

8109 Fredericksburg Rd, San Antonio, TX 78229  
Comprehensive Community Cancer Program  
Phone (210) 575-4140 | [www.sahealth.com](http://www.sahealth.com)

**Methodist Richardson Medical Center**

2831 E. President George Bush Turnpike (190), Richardson, TX 75082  
Community Cancer Program  
Phone (469) 204-1000 | <http://www.methodisthealthsystem.org/Richardson>

**Midland Memorial Hospital**

400 Rosalind Redfern Grover Parkway, Midland, TX 79701-6499  
Comprehensive Community Cancer Program  
Phone (432) 685-1111 | [www.midland-memorial.com](http://www.midland-memorial.com)

**Nacogdoches Medical Center**

4920 Northeast Stalling Drive, Nacogdoches, TX 75965  
Community Cancer Program  
Phone (800) 539-5772 | [Nacmedicalcenter.com](http://Nacmedicalcenter.com)

**North Austin Medical Center**

12221 Mopac Expressway North, Austin, TX 78758-2483  
Comprehensive Community Cancer Program  
Phone (512) 901-1000 | [www.northaustin.com](http://www.northaustin.com)

**Northwest Texas Healthcare System**

1501 South Coulter Avenue, Amarillo, TX 79106-1790  
Community Cancer Program  
Phone (806) 354-1000 | [www.nwtexashealthcare.com](http://www.nwtexashealthcare.com)

**Park Plaza Hospital**

1313 Hermann Drive, Houston, TX 77004-7092  
Community Cancer Program  
Phone (713) 527-5000 | [www.parkplazahospital.com](http://www.parkplazahospital.com)

**Parkland Health & Hospital System**

5201 Harry Hines Boulevard, Dallas, TX 75235-8590  
Academic Comprehensive Cancer Program  
Phone (214) 590-8000 | [www.pmh.org](http://www.pmh.org)

**Plaza Medical Center of Fort Worth**

900 Eighth Avenue, Fort Worth, TX 76104-3986  
Community Cancer Program  
Phone (817) 336-2100 | [www.plazamedicalcenter.com](http://www.plazamedicalcenter.com)

**Providence Health Center**

6901 Medical Parkway, Waco, TX 76712-7998  
Comprehensive Community Cancer Program  
Phone (254) 751-4000 | [www.providence.net](http://www.providence.net)

**San Jacinto Methodist Hospital**

4401 Garth Road, Baytown, TX 77521-3160  
Community Cancer Program  
Phone (281) 420-8600 | [www.sanjacintomethodist.com](http://www.sanjacintomethodist.com)

**Scott and White Memorial Hospital**

2401 South 31st Street, Temple, TX 76508-0002  
Academic Comprehensive Cancer Program  
Phone (254) 724-2111 | [www.cancer.sw.org](http://www.cancer.sw.org)

**Seton Healthcare Family****Network Oncology Administration,**

1301 West 38th Street, Suite 703, Austin, TX 78705  
Integrated Network Cancer Program  
Phone (512) 324-4444 | [www.seton.net](http://www.seton.net)

**St. David's Medical Center**

919 East 32nd Street, Austin, TX 78705-2709  
Comprehensive Community Cancer Program  
Phone (512) 476-7111 | [www.stdavids.com](http://www.stdavids.com)

**St. David's Round Rock Medical Center**

2400 Round Rock Avenue, Round Rock, TX 78681-4097  
Community Cancer Program  
Phone (512) 341-6401 | [www.roundrockmc.com](http://www.roundrockmc.com)

**St. David's South Austin Medical Center**

901 West Ben White Boulevard, Austin, TX 78704-6903  
Community Cancer Program  
Phone (512) 447-2211 | [www.southaustinhospital.com](http://www.southaustinhospital.com)

**St. Joseph Regional Health Center**

2801 Franciscan Drive, Bryan, TX 77802-2548  
Comprehensive Community Cancer Program  
Phone (979) 776-3777 | [www.st-joseph.org](http://www.st-joseph.org)

**Texas Health - Arlington Memorial Hospital**

800 West Randol Mill Road, Arlington, TX 76012-2503  
Comprehensive Community Cancer Program  
Phone (817) 960-6106 | [www.texashealth.org/Arlington](http://www.texashealth.org/Arlington)

**Texas Health Harris Methodist Hospital Fort Worth**

Klabzuba Cancer Center, 1301 Pennsylvania Avenue, Fort Worth, TX 76104-2895  
Comprehensive Community Cancer Program  
Phone (877) 847-9355 | [www.texashealth.org](http://www.texashealth.org)

**Texas Health Harris Methodist Hospital Hurst-Euless-Bedford**

1600 Hospital Parkway, Bedford, TX 76022  
Comprehensive Community Cancer Program  
Phone (817) 848-4000 | [www.texashealth.org](http://www.texashealth.org)

**Texas Health Harris Methodist Hospital Southwest Fort Worth**

6100 Harris Parkway, Fort Worth, TX 76132-4199  
Community Cancer Program  
Phone (817) 433-6550 | [www.texashealth.org](http://www.texashealth.org)

**Texas Health Presbyterian Hospital Dallas**

8200 Walnut Hill Lane, Dallas, TX 75231-4402  
Comprehensive Community Cancer Program  
Phone (214) 345-6789 | [www.texashealth.org](http://www.texashealth.org)

**Texas Health Presbyterian Hospital Plano**

6200 West Parker Road, Plano, TX 75093-7914  
Comprehensive Community Cancer Program  
Phone (972) 981-8000 | [www.texashealth.org](http://www.texashealth.org)

**The Methodist Hospital**

6565 Fannin Street, Houston, TX 77030-2707  
Academic Comprehensive Cancer Program  
Phone (713) 790-2700 | [www.methodisthealth.com](http://www.methodisthealth.com)

**Trinity Mother Frances Health System**  
800 East Dawson, Tyler, TX 75701-2036  
Comprehensive Community Cancer Program  
Phone (903) 593-8441 | [www.tmfhs.org](http://www.tmfhs.org)

**University Health System**  
4502 Medical Drive, San Antonio, TX 78229-4493  
Academic Comprehensive Cancer Program  
Phone (210) 358-3544 | [www.universityhealthsystem.com](http://www.universityhealthsystem.com)

**University Medical Center**  
602 Indiana Avenue, Lubbock, TX 79415-3364  
Academic Comprehensive Cancer Program  
Phone (806) 775-8600 | [www.umchealthsystem.com](http://www.umchealthsystem.com)

**University Medical Center of El Paso**  
4815 Alameda Avenue, El Paso, TX 79905-2794  
Academic Comprehensive Cancer Program  
Phone (915) 544-1200 | [www.umcelpaso.org](http://www.umcelpaso.org)

**University of Texas M.D. Anderson Cancer Center**  
1515 Holcombe Boulevard, Unit 1484, Houston, TX 77030-4095  
NCI Designated Comprehensive Cancer Program  
Phone (713) 792-7475 | [www.mdanderson.org](http://www.mdanderson.org)

**University of Texas Medical Branch Hospitals**  
301 University Boulevard, Galveston, TX 77555-0540  
Academic Comprehensive Cancer Program  
Phone (409) 772-2222 | [www.utmb.edu](http://www.utmb.edu)

**UT Health Northeast**  
11937 US Highway 271, Tyler, TX 75708-3154  
Community Cancer Program  
Phone (855) 506-4673 | [www.uthealth.org](http://www.uthealth.org)

**UTSW William P. Clements University Hospital**  
5909 Harry Hines Boulevard, Dallas, TX 75390  
NCI Designated Comprehensive Cancer Program  
Phone (866) 645-5455 | <http://www.utsmedicine.org/conditions-specialties/cancer/>

**VA Medical Center**  
2002 Holcombe Boulevard, Houston, TX 77030-4298  
Veterans Affairs Cancer Program  
Phone (713) 794-8042 | [www.houston.med.va.gov](http://www.houston.med.va.gov)

**VA North Texas Health Care System**  
4500 South Lancaster Road, Dallas, TX 75216-7167  
Veterans Affairs Cancer Program  
Phone (214) 742-8387 | [www.va.gov/sta](http://www.va.gov/sta)

**William Beaumont Army Medical Center**  
5005 North Piedras Street, El Paso, TX 79920-5001  
Community Cancer Program  
Phone (915) 742-2121 | [www.wbamc.amedd.army.mil](http://www.wbamc.amedd.army.mil)

**Wise Health System**

2000 South Fm 51, Decatur, TX 76234-9295

Community Cancer Program

Phone (940) 627-5921 [www.wiseregional.com](http://www.wiseregional.com) |