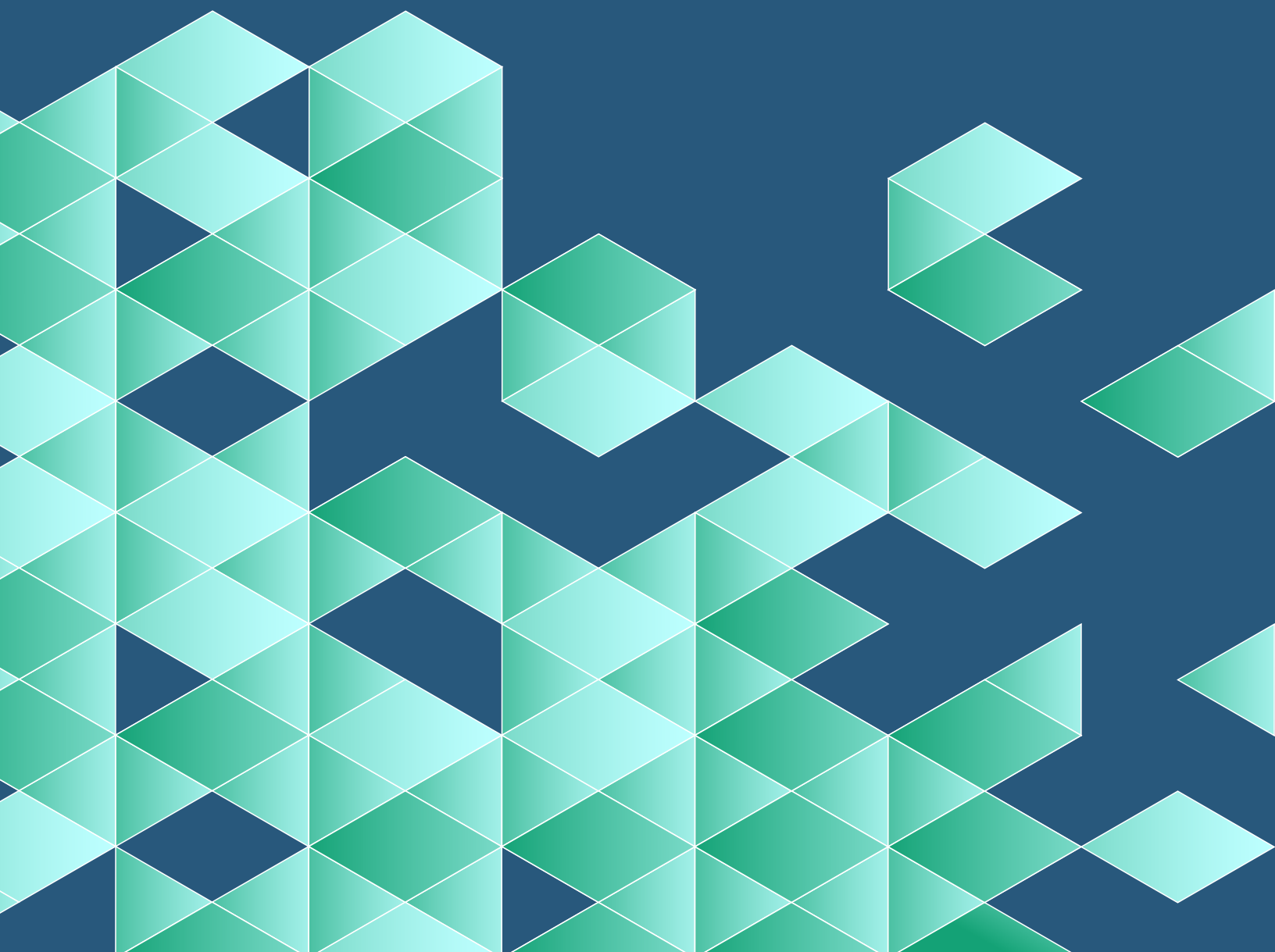


Texas Allied Health Labor Force Analysis

June 2021

Texas Workforce Investment Council



The Mission of the Texas Workforce Investment Council

Assisting the Governor and the Legislature with strategic planning for and evaluation of the Texas workforce system to promote the development of a well-educated, highly skilled workforce for Texas.

TEXAS ALLIED HEALTH LABOR FORCE ANALYSIS

Texas Workforce Investment Council

June 2021

This page intentionally left blank.

Table of Contents

Introduction	1
The Texas Workforce Investment Council	1
Statutory Directive.....	1
The State Workforce System Strategic Plan	2
Scope of Report.....	2
Data and Methodology	3
Data Issues and Limitations	5
Labor Force	5
Context of the Study	7
The Current and Future Population of the United States	10
The Current Allied Health Labor Force of the United States	13
Demographic Analysis of the Texas Population	16
The Current and Future Population of Texas.....	16
Demographic Analysis of the Texas Allied Health Labor Force.....	19
Conclusion	28
References.....	29
Appendix A: Allied Health Occupations Matrix.....	32

List of Tables

Table 1: United States Allied Health Labor Force by Type and Sex, 2019	15
Table 2: Race/Ethnicity of the United States Allied Health Labor Force, 2019	15
Table 3: Texas Allied Health Labor Force by Type and Sex, 2019	21
Table 4: Race/Ethnicity of the Texas Allied Health Labor Force, 2019	21
Table 5: Labor Force Participation Status of the Allied Health Labor Force, 2019	22
Table 6: Wages or Salary Income for Allied Health Labor Force by Sex, 2019	24
Table 7: Texas Allied Health Labor Force by Designated Entry-Level Education of Occupations, 2019.....	26

List of Figures

Figure 1: Historical Population of the United States, 1960-2020	10
Figure 2: Population Projections for the United States, 2019-2050.....	10
Figure 3: Comparison of Projected United States Age Structure, 2019-2050	11
Figure 4: Race/Ethnicity of the United States, 2019.....	12
Figure 5: Projected Race/Ethnicity Composition of the United States, 2050.....	12
Figure 6: United States Allied Health Labor Force, 2019	13
Figure 7: United States Allied Health Labor Force by Occupation and Sex, 2019	14
Figure 8: Texas Population Pyramids, 2019-2050.....	17
Figure 9: Race/Ethnicity of the Texas Population, 2019	18
Figure 10: Projected Race/Ethnicity of the Texas Population, 2050	18
Figure 11: Texas Allied Health Labor Force, 2019.....	19
Figure 12: Texas Allied Health Labor Force by Type and Sex, 2019.....	20
Figure 13: Frequency of Allied Health Occupations Entry-Level Education Requirements.....	25

COVID-19

This study was prepared using data encompassing a period prior to the COVID-19 pandemic and represents a snapshot in time. The authors are aware that the significant impacts of COVID-19 on the economy, workforce, etc., will not be reflected in this report.

Introduction

Despite tracing the origins of the allied health field to around the time of World War I, recent studies on the allied health labor force in the West have received a disparate amount of attention (Stagnitti, Schoo, Reid, & Dunbar, 2005; Arena, Goldberg, Ingersoll, Larsen, & Shelledy, 2011). Allied health professionals play a pivotal role in primary and preventative healthcare and represent many and varied allied health disciplines (Arena, Goldberg, Ingersoll, Larsen, & Shelledy, 2011). According to the Association of Schools Advancing Health Professions, “allied Health professionals are involved with the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders; dietary and nutrition services; rehabilitation and health systems management, among others” (Association of Schools Advancing Health Professions, 2021). Examples of allied health professions include dental hygienists, diagnostic medical sonographers, dietitians, medical technologists, occupational therapists, physical therapists, radiographers, respiratory therapists, and speech language pathologists. This report provides general demographic and occupation-related benchmarks of allied health occupations in the United States and Texas. Demographic features of the current population and projected population are presented first, in order to provide context for the report. This is followed by a brief section that broadly describes the sex and race/ethnicity of the current health professions workforce. The remainder of the report is a description and analysis of labor market and education data for the top 20 selected occupations, which can be considered representative of the allied health workforce. Appendices provide additional detail for all 55 of the allied health occupations identified for this report.

The Texas Workforce Investment Council

The Texas Workforce Investment Council (Council) was created in 1993 by the 73rd Texas Legislature. As an advisory body to the Governor and the Legislature, the Council assists with strategic planning for and evaluation of Texas’ workforce system. The Council promotes the development of a well-educated, highly skilled workforce for Texas and advocates for a workforce system that provides quality workforce education and training opportunities. The 19-member Council includes representatives from business, labor, education, community-based organizations, and the Council’s five member state agencies.

Statutory Directive

Under Title 10, Texas Government Code Section 2308.101, the Council is responsible for promoting the development of a well-educated, highly skilled workforce and advocating the development of an integrated workforce system to provide quality services addressing the needs of business and workers in Texas.

The State Workforce System Strategic Plan

To sustain and increase economic growth, a well-trained labor supply must be available for employers seeking to establish, conduct, or expand business operations in Texas. The mission of *The Texas Workforce System Strategic Plan FY 2016–FY 2023* is to position Texas as a global economic leader by growing and sustaining a competitive workforce. All Texans are part of the critical pool of potential employees that is and will be required by Texas employers. This includes allied health workers.

Scope of Report

This report presents a demographic analysis of the allied health labor force in Texas. The first section uses national data to summarize U.S. population trends and the national allied health labor force. The second section focuses on the current and future population of Texas. The third section provides demographic and occupation-related data on the allied health labor force in Texas.

Data and Methodology

The allied health labor force refers to a broad range of occupations involved with the delivery of health-related services that are distinct from medicine and nursing. In order to provide the broadest definition of allied health occupations, the first step in this process was to review the research literature to identify as many allied health professions as possible. The second step was to develop an allied health occupations matrix to cross-reference these source listings for similarities and differences. From this, a list of 55 allied health occupations was identified. The third step consisted of extracting demographic, economic, and education data from several datasets to provide general benchmarks of the allied health occupations. A brief description of this process is outlined in the following paragraphs.

Occupational information has long been collected as part of the national census. However, a thorough effort to collect more accurate occupational data did not occur until the Standard Occupational Classification (SOC) system was created in the late 1970s. The SOC system was created to replicate the occupational structure of the nation, and as such, does not include every available individual job title. The SOC system organizes and classifies occupations based on similar job duties, skills, education, and training. Therefore, while the SOC system includes fewer detailed occupation codes compared to the total number of possible jobs, in general, the system identifies the broadest list of occupations for pay or profit in the national economy. The SOC system serves as a statistical tool for numerous entities across the nation to efficiently analyze, identify, and organize workforce data. For instance, the U.S. Bureau of Labor Statistics (BLS) and the U.S. Census Bureau are charged with gathering and publishing information on national employment figures for SOC occupations. The SOC system organizes and codes jobs into 867 detailed occupations, aggregated into 459 broad occupations. This classification system then combines these 459 broad occupations into 98 minor groups and 23 major groups. The SOC system has been revised and updated periodically to accurately reflect the economy and workforce system. The 2018 SOC system is the latest revision of SOC since 2010.

Using SOC detailed occupation codes, Council staff identified allied health occupations from ten different sources consisting of federal, state, education, and medical organizations. Each source considered a different number of occupations as allied health occupations. To organize this information, Council staff produced the allied health occupations matrix which is presented in detail in Appendix A. Based on the identified allied health occupations, the matrix of allied health occupations was narrowed using the BLS healthcare careers list available in the Occupation Employment Statistics handbook with occupations that are generally considered as part of the allied health labor force. To do this, staff relied on source listings from the Association of Schools Advancing Health Professions, the Center for Health Professions, the National Health Service, and the Department of Allied Health at the University of Illinois in Springfield. Occupations that were identified as allied health were documented in the allied health occupations matrix in a Microsoft Excel spreadsheet. The matrix orders these occupations by 2018 SOC major and minor occupation codes. The contents of the matrix include the following columns:

- SOC Code
- SOC Occupation Title
- Typical level of education that most workers need to enter this occupation (designated by BLS level of education on the matrix)
- Association of Schools Advancing Health Professions (ASAHP) – used to compile list of allied health occupations

- Center for Health Professions (CHP) - used to compile list of allied health occupations
- National Health Service (NHS) - used to compile list of allied health occupations
- Department of Allied Health at the University of Illinois in Springfield (UIS) - used to compile list of allied health occupations
- Whether SOC code was present in Current Population Survey data sets (BLS)
- Whether SOC code was present in American Community Survey data sets (ACS PUMS)
- Whether SOC code was present in Texas Workforce Commission Labor Market Information data sets (TWC Wages Report)
- Whether SOC code was present in Texas Workforce Commission Labor Market Information data sets (TWC Staffing Patterns Report)

To extract demographic and socioeconomic data for these occupations, staff then reviewed the most relevant data sets to identify if the necessary SOC codes were available within these data sets to guide the report's narrative and populate its many figures and tables. These data sets include:

- U.S. Census Bureau, American Community Survey (ACS) 2019 1-year Public Use Microdata Sample (PUMS) file custom estimates. ACS 1-year data files ensure the most current data are used while still allowing for analysis of a large population. ACS data are also available as summary tables. The microdata utilizes a smaller sample than the summary tables, but can be used to calculate custom estimates.
- BLS Occupational Employment Statistics by way of the Current Population Survey (CPS). BLS develops annual and monthly labor force statistics from the CPS. The CPS is an ongoing monthly survey administered to a sample of households. CPS data are utilized for various economic statistics such as the national unemployment rate and measures related to employment and income.
- The Texas Workforce Commission develops and publishes annual and monthly labor force statistics via the Texas Labor Market Information webpage. These data are utilized for various economic statistics such as the state unemployment rate, measures related to employment and income, as well as occupation projections.

During the review process, if an occupation's SOC code was present in any of these data sets, a checkmark was placed in the corresponding cell on the matrix. SOC codes were then translated for use with the 2019 ACS PUMS file using the SOCP¹ variable. As a result of this translation, the original list of 55 has been consolidated to 50. Following this process, demographic, economic, and education data was extracted.

The main data sources used for this report include: the 2019 ACS (summary table), 2019 ACS PUMS (microdata), and labor force data from BLS. The ACS is an ongoing, yearly survey that samples a small percentage of the population. The sample respondents are weighted to approximate the demographic characteristics of the entire population. ACS data are available as summary tables and PUMS (public use microdata sample) files. The creation of custom analyses relies on 2019 ACS PUMS (microdata) files. In this report, 2019 ACS (summary table) data support analyses at the national level and 2019 ACS PUMS

¹ Standard Occupational Classification (SOC) codes for 2018 and later based on 2018 SOC codes.

(microdata) data support analyses at the state level, unless otherwise specified. Differences exist between the information derived from the ACS (summary table) and ACS PUMS (microdata) because of sampling differences. Based on techniques applied during analysis, data source totals may differ across analyses and sections.

BLS derives annual and monthly labor force statistics from the CPS. The CPS is an ongoing monthly survey administered to a sample of households. Economic statistics such as the national unemployment rate and measures related to employment and income use CPS data.

The Texas Demographic Center produces population projections for 2010 to 2050. These projections provide statewide population totals utilizing recent migration trends, race/ethnicity categories, and age distribution. This most recent set of projections utilize a single projection scenario of migration patterns observed in Texas between 2010 and 2015 that are assumed throughout the years available in the three projections. An emphasis on migration patterns for this latest set of projections emphasizes strong domestic migration and a smaller share of international migration. This trend could mitigate the aging effect of the Baby Boom generation on the Texas population over time (Texas Demographic Center, 2019).

Data Issues and Limitations

The specific analyses that can be conducted are limited to the variables that are included in the datasets. Analyses are also limited because estimates are not always available for certain geographies. For example, even though the ACS microdata provide rich demographic data with variables assessing various individual characteristics, data are not available at the county level. Therefore, analyses cannot be conducted for counties using only the ACS microdata.

Unlike the decennial census, which is administered to the total population in order to determine accurate counts, the ACS and CPS are based on samples and produce estimates. Since the two data sources utilize different samples and methodologies, the estimates from each source will be similar but will not exactly match. When possible, the ACS estimates will be referenced since a majority of the analyses in this report are based on that dataset.

Labor Force

To remain consistent with accepted concepts and measures related to the labor force (such as the labor force participation and unemployment rates), all labor force analyses refer to only the civilian labor force. The civilian labor force is composed of all noninstitutionalized individuals 16 years old and older who are either employed or unemployed. The civilian labor force includes all civilian workers in the private sector, and in state and local government. This definition includes unemployed individuals. An unemployed person must have been available to work during the reference week the survey was taken, was actively looking for work during the last four weeks, and was available to accept a job (U.S. Census Bureau, 2019). This definition excludes those individuals residing in institutional group quarters facilities such as correctional institutions, juvenile facilities, skilled nursing facilities, and other long-term care

living arrangements. In addition, individuals on active-duty in the armed forces are also excluded from this designation. For comparative analyses, the number and percentages of individuals not in the labor force are also provided.

Context of the Study

At present, a combination of demographic, socioeconomic, and society-wide changes challenge the healthcare labor force. The demand for healthcare workers continues to rise amidst a shortage of healthcare workers (Pruitt & Epping-Jordan, 2005; Flaherty & Bartels, 2020). Over the last century, shortages and surpluses of healthcare workers became common (Buerhaus et al., 2017; Whelan, 2017). However, the current challenges differentiate this shortage from shortages in the past in significant ways. Emerging demographic, economic, and healthcare delivery issues characterize the current healthcare workforce shortage (Lopes, Almeida, & Almada-Lobo, 2015; Bates, John, Bruno, Fu, & Aliabadi, 2016; Flaherty & Bartels, 2019). As the U.S. population continues to age, the healthcare labor force will age with it (Auerbach, Buerhaus, & Staiger, 2015; Kirch & Petelle, 2017). Aging Baby Boomers present challenges to existing healthcare models (Buerhaus, Skinner, Auerbach, & Staiger, 2017). As people live longer, experts expect a rise in the need for geriatric and long-term care. However, the current clinical capacity of the healthcare workforce to provide chronic disease management is inadequate (Centers for Disease Control and Prevention, 2013). An aging population also places demands on the Medicare system. Over 55 million Americans age 65 and older are currently covered by Medicare (Centers for Medicare and Medicaid Services, 2017). The Centers for Medicare and Medicaid Services projects that Medicare will cover approximately 80 million people by 2030 (2017). Growth in this segment of the population will drive the need for Medicare and related healthcare services. In turn, this will increase the demand for healthcare workers.

Additionally, chronic health problems account for more than half of the global disease burden (Pruitt & Epping-Jordan, 2005; Tichenor & Sridhar, 2019). To meet the challenge, research suggests that a well-trained healthcare workforce is an essential resource for effective healthcare delivery systems (World Health Organization, 2007; Jaeger, Bechir, Moto, & Utzinger, 2018). However, a growing body of research continues to stress that the workforce of the present is not prepared to manage today's most prevalent health-related problems (Robbins, 1972; Mase, 2009; McLaughlin, et al., 2019). These concerns are exacerbated by years of research that has focused on increasing the number of skilled healthcare workers to address these issues rather than on improving training and preparation to enter the workforce and on-the-job quality (Pruitt & Epping-Jordan, 2005; World Health Organization, 2015; Advisory Committee on Interdisciplinary, Community-Based Linkages, 2018). A report of The Association of Schools Advancing Health Professions (ASAHP) Clinical Education Task Force recommends that, "the sustainability of a healthcare system that can propel the nation into the future depends on the recruitment and effective preparation of the next generation of learner" (Advisory Committee on Interdisciplinary, Community-Based Linkages, 2018). Following the ASAHP report, an advisory committee of the Health Resources Services Administration was tasked with the development of a set of national training resources for clinical and translational sciences, including educational and on-the-job training core competencies in non-traditional settings (National Center for Advancing Translational Sciences, 2021). The emphasis on non-traditional settings provides opportunities for community-based and support-related healthcare occupations to improve evidence-based clinical education and training for the healthcare workforce. For allied health educators, this means an opportunity to enhance worker training and improvements in patient care.

According to the University of Texas Health Science Center at San Antonio, allied health occupations are the largest group of healthcare providers in the United States (The University of Texas Health Science

Center at San Antonio, 2021). Allied health occupations provide a variety of direct and support services including, “the identification, evaluation, and prevention of diseases and disorders; dietary and nutrition services; rehabilitation and health systems management, among others” (Association of Schools Advancing Health Professions, 2021). Although what occupations are identified as allied health vary, estimates suggest that anywhere from 60 to 80 percent of the U.S. healthcare labor force may be considered as allied health (American Medical Association, 2021; Association of Schools Advancing Health Professions, 2021; The University of Texas Health Science Center at San Antonio, 2021). Formal medicine and nursing occupations are not traditionally considered allied health (Association of Schools Advancing Health Professions, 2021; University of California, 2021). Additional definitions found in the Federal Code and in The Patient Protection and Affordable Care Act define individuals in allied health occupations as someone who:

Has graduated and received an allied health professions degree or certificate from an institution of higher education and is employed with a Federal, State, local or tribal public health agency, or in a setting or in a setting where patients might require health care services, including acute care facilities, ambulatory care facilities, personal residences, and other settings located in health professional shortage areas, medically underserved areas, or medically underserved populations, as recognized by the Secretary of Health and Human Services (United States Library of Congress, 2010).

The importance of allied health occupations in providing support for doctors and nurses goes back at least to the early 1900s when technological strides made during World War I placed these occupations into focus (Rush University, 2021). Following World War II, “the rise of public demand for health care combined with higher health care costs spurred the development of service delivery outside of hospitals” (Mangine, 2017). This led to the development of the Allied Health Professions Personnel Training Act of 1966 (U.S. Department of Health, Education, & Welfare, 1966), authorizing funding for education and training to attract students to allied health professions. As the allied health field expanded, healthcare access, quality, and effectiveness improved and the demand for allied health workers increased. This, coupled with an aging population and the increases in chronic medical conditions, brought about the development of medical service delivery systems outside of hospitals. These developments led to patient care in physician offices, walk-in medical clinics, and community-based settings where allied health services have primarily resided (American Medical Association, 2013).

However, what occupations compose the field of allied health has often been the topic of debate, and because allied health professions possess skills that overlap with those of other professions, standards that contribute to improving healthcare access and quality have been difficult to develop. Additionally, in recent years, debate over scope of practice, that is, “the procedures, actions, and processes that a healthcare practitioner is permitted to undertake in keeping with the terms of their medical license” (Scope of Practice Policy, 2021) has once again returned the focus to qualifications, academic requirements, licensure, certification, independent governance, ethical standards, disciplinary processes, and peer review of non-physician providers in all fifty states (American Medical Association, 2006; Elwood, 2013). Still, the disparate nature of allied health occupation classification has made the necessity for benchmarks necessary. Therefore, this report aims to provide general benchmarks of the allied health labor force by focusing on the following topics:

1. The changing demographics of the American population;

2. The demographic characteristics of the allied health labor force;
3. The current and future demographics of the Texas population; and
4. The demographic, economic, and occupational characteristics of the allied health labor force in Texas.

The Current and Future Population of the United States

The population of the United States has grown since the first decennial census in 1960, as shown in Figure 1. From 1960 to 1970, the population of the United States grew from 179,323,175 individuals to 203,211,926 individuals. By 2010, the population grew to 308,745,538 individuals. Preliminary data from the 2020 decennial census estimates the U.S. population at approximately 332,639,000 individuals.

Figure 1: Historical Population of the United States, 1960-2020

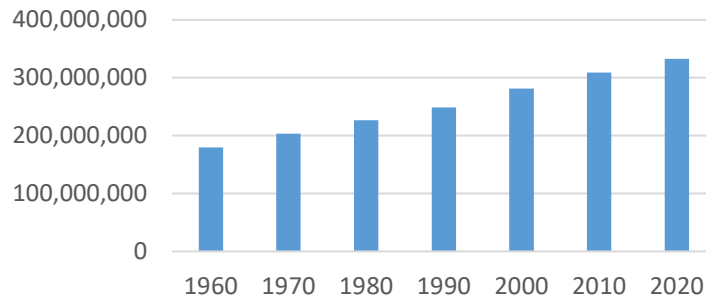


Figure note: 1960 through 2010 data are from the Decennial Census; 2020 is from Main Projections Series for the United States, 2017-2060. U.S. Census Bureau, Population Division: Washington D.C.

By 2050, as shown in Figure 2, the U.S. Census Bureau projects that the American population will exceed 388 million individuals.

Figure 2: Population Projections for the United States, 2019-2050

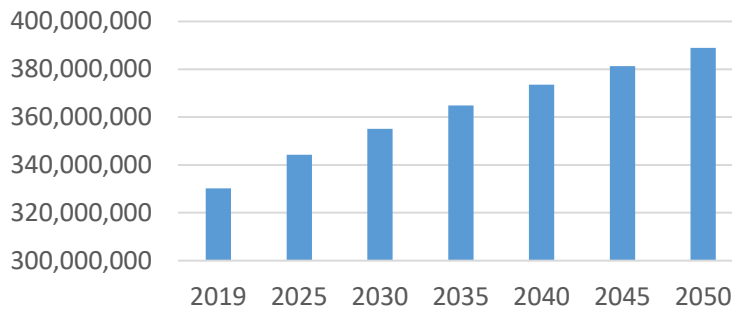


Figure note: Main Projections Series for the United States, 2017-2060. U.S. Census Bureau, Population Division: Washington D.C.

To understand the impacts of population change in the United States, two factors are considered. The first focuses on the aging of the Baby Boom generation. The largest percentage increase in the annual growth rate of the Baby Boom generation occurred between 1946-1947. Growth continued through 1964, followed by a decline, and remained stable through 1990. The first Baby Boomers turned 65 in 2011. In 2030, all Baby Boomers will have turned 65 years of age. This will result in various shifts to the age structure of the country as demonstrated in Figure 3. By 2030, the U.S. Census Bureau projects that

one in five Americans will be age 65 and over (Colby & Ortman, 2014). The aging of the population is expected to drive an increase in old-age dependency, presenting challenges to businesses, families, government agencies, and the workforce as they work to meet the needs of this growing population of Americans.

Figure 3: Comparison of Projected United States Age Structure, 2019-2050

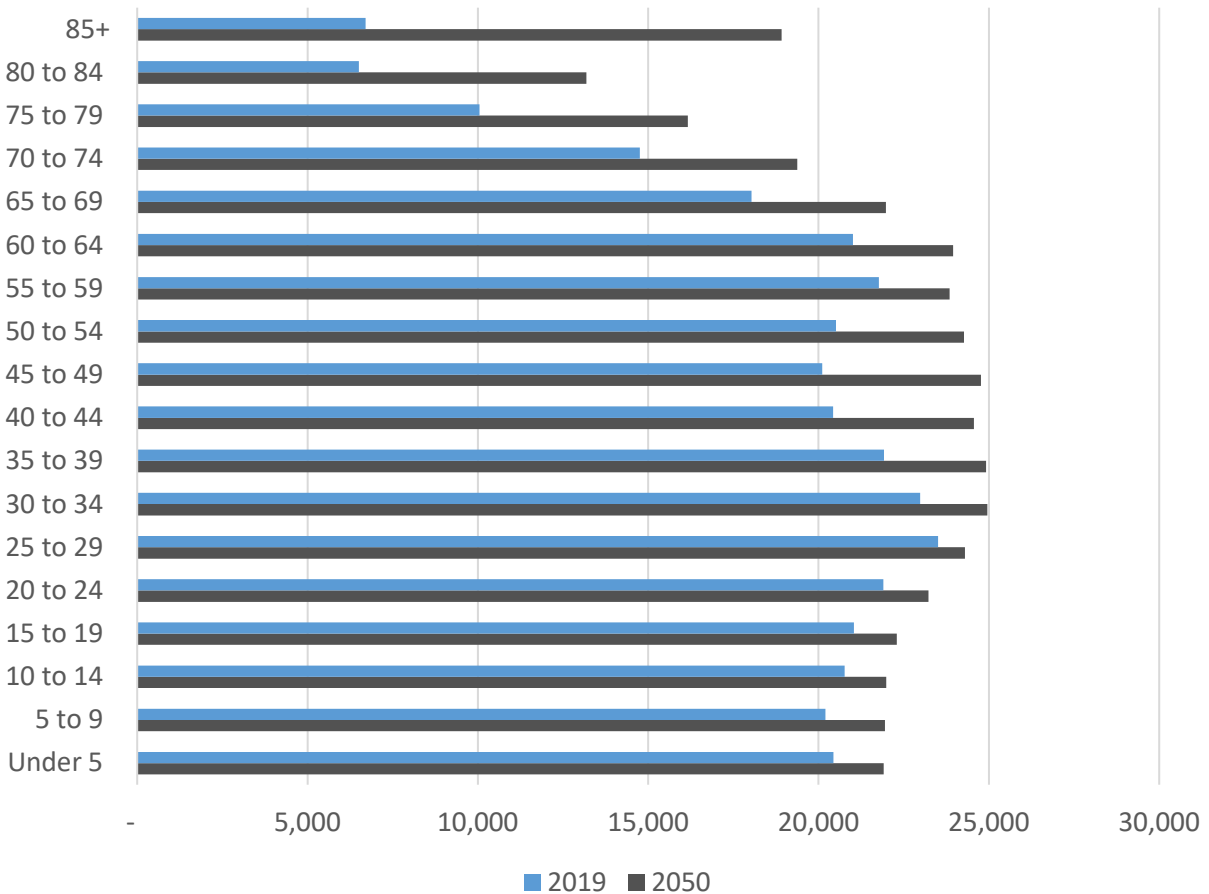


Figure note: Projected Population Size and Births, Deaths, and Migration: Main Projections Series for the United States, 2017-2060. U.S. Census Bureau, Population Division: Washington, D.C.

The second factor concerns the growing diversification of race/ethnic groups, particularly the increasing percentage of Hispanics. Figure 4 shows the percentages of the population by race/ethnicity group for 2019. Estimates indicate that Whites make up the largest race/ethnicity category at 60 percent. The Hispanic population is the second largest group at 18 percent, followed by African Americans at 12 percent, Asians at six percent, and Other (consisting of American Indians, Alaska Natives, and Native Hawaiians, and individuals claiming some other race, or two or more races) at four percent.

Figure 4: Race/Ethnicity of the United States, 2019

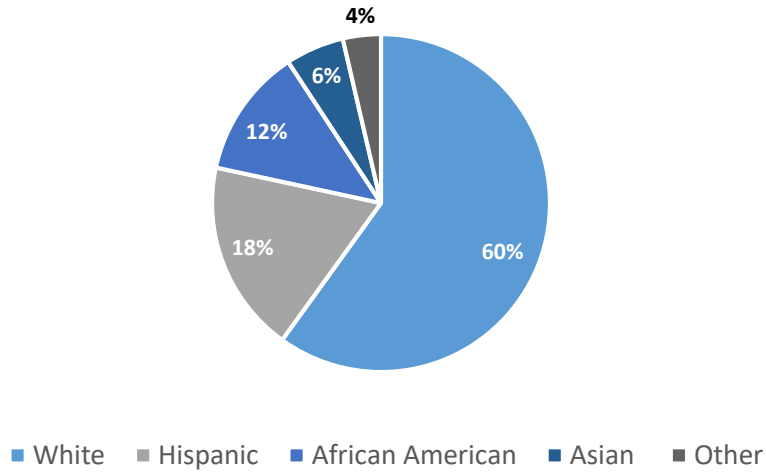


Figure note: Main Projections Series for the United States, 2017-2060. U.S. Census Bureau, Population Division: Washington, D.C.

Figure 5 shows the percentages of the population by race/ethnicity group for 2050. By 2050, approximately 48 percent of the population will be White, 26 percent will be Hispanic, and 15 percent will be African American. Asians, which the data show to be the fastest-growing race/ethnicity group (U.S. Census Bureau, 2020), are projected to be nearly ten percent of the population by 2050, with individuals in the Other race/ethnicity category making up two percent of the total population. These projections assume that changes to the age structure observed in the current decade are likely to continue.

Figure 5: Projected Race/Ethnicity Composition of the United States, 2050

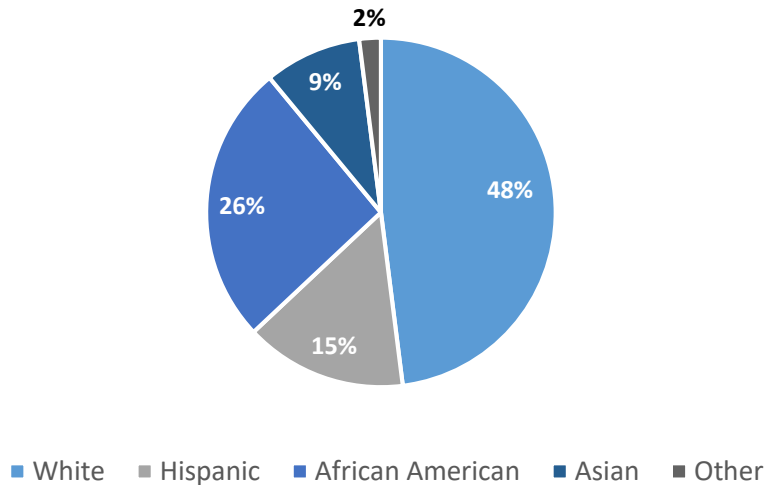


Figure note: Main Projections Series for the United States, 2017-2060. U.S. Census Bureau, Population Division: Washington, D.C.

The Current Allied Health Labor Force of the United States

Demographic and socioeconomic changes have influenced the allied health workforce in America. In this section, the demographic and socioeconomic characteristics of the current national allied health labor force are examined.

In 2019, 11,010,180 individuals composed the allied health labor force in the United States. As shown on Figure 6, of the top 20 allied health occupations, the top five consist of Personal Care Aides, which made up the largest number with 1,847,930 individuals (17 percent). Social Workers follow with 820,955 individuals (8 percent), Home Health Aides with 717,099 individuals (6.5 percent), Medical Assistants with 692,855 individuals (6.3 percent), and Pharmacy Technicians with 444,717 individuals (4 percent).

Figure 6: United States Allied Health Labor Force, 2019

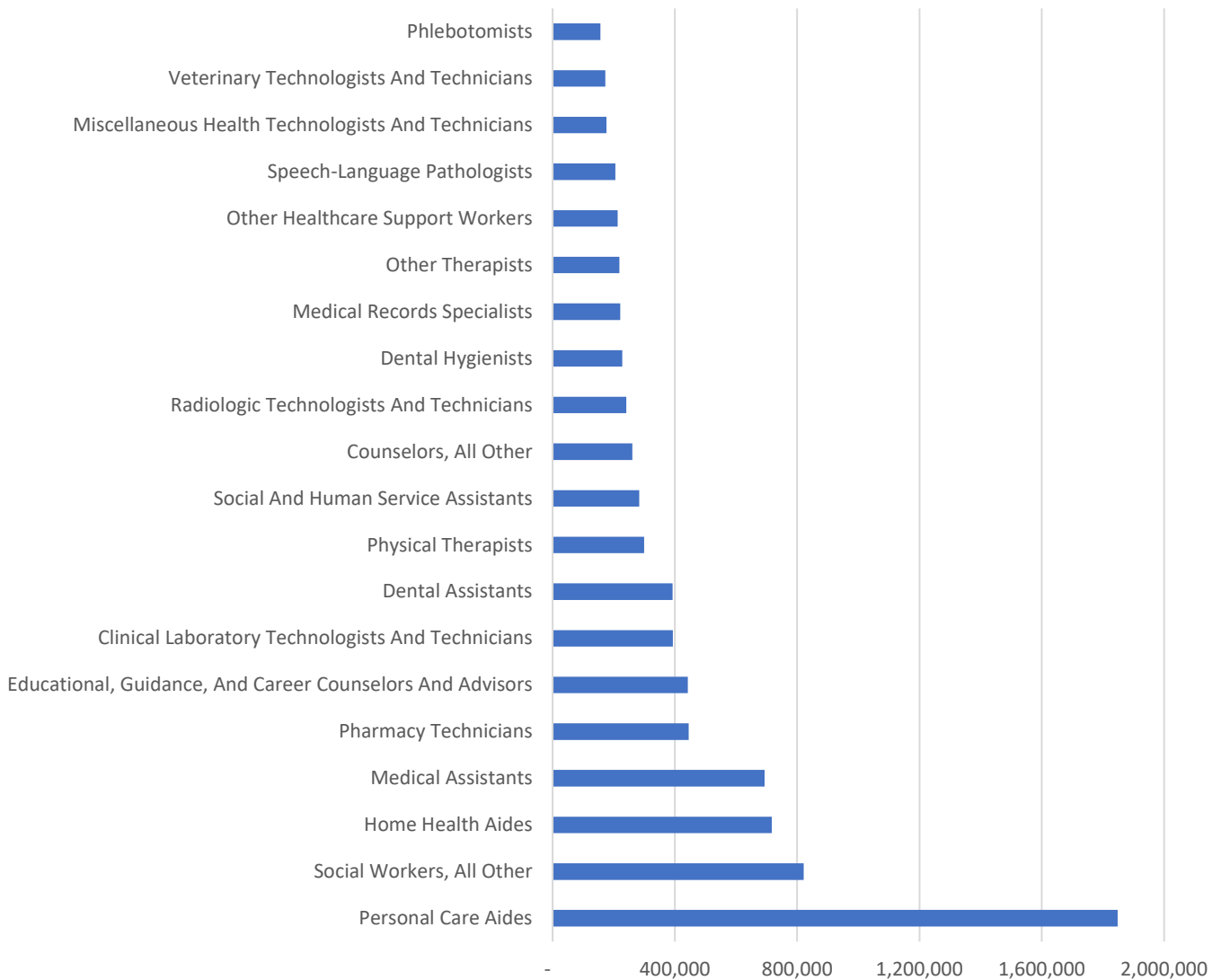


Figure note: 2019 ACS (microdata).

Figure 7 compares the number of male and female allied health professionals by occupation. A large difference exists between the number of male and female professionals in allied health. Despite the higher male representation in allied health professions, the majority remains predominantly female (Mackintosh, 1997; Landivar, 2013).

Figure 7: United States Allied Health Labor Force by Occupation and Sex, 2019

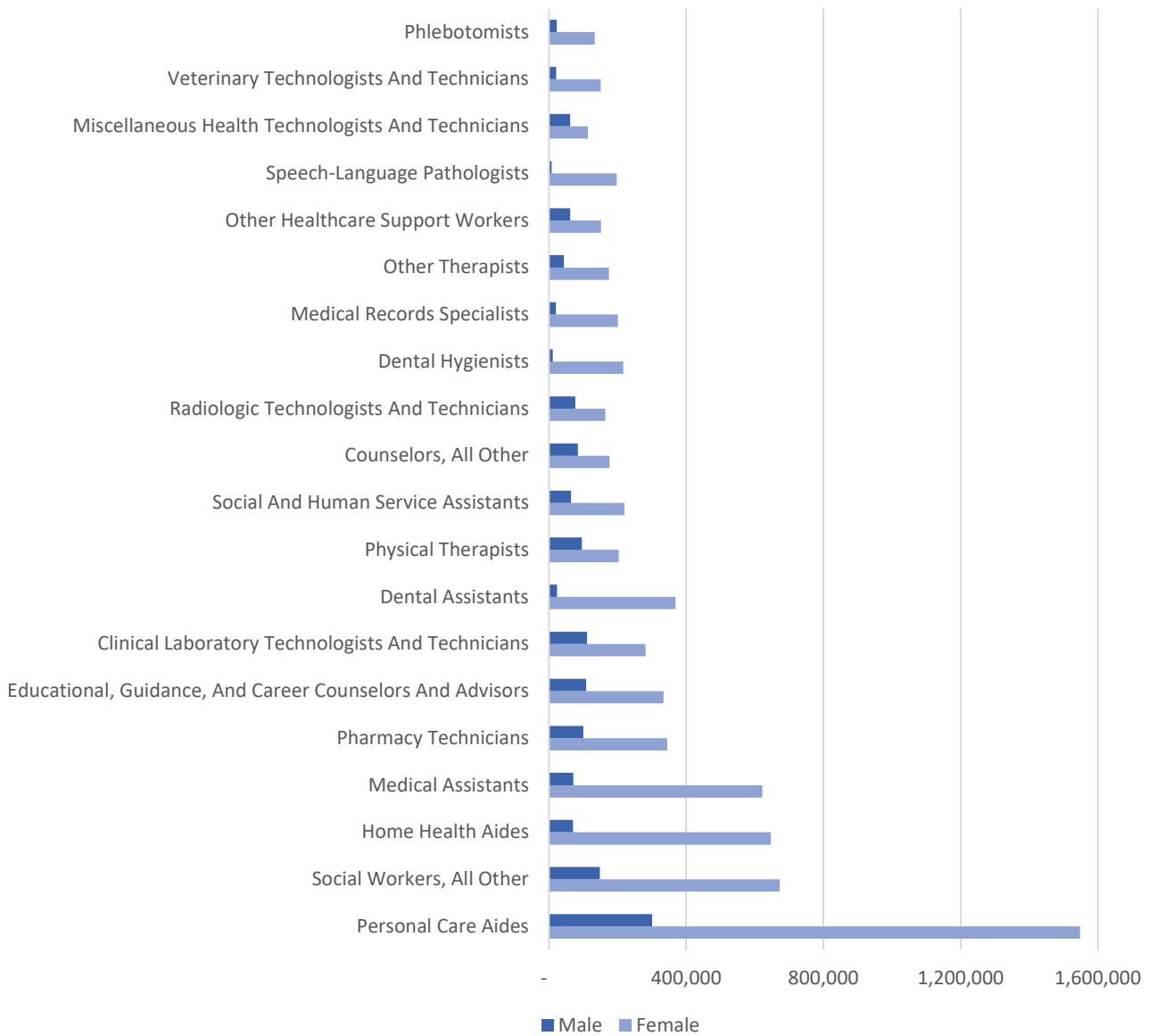


Figure note: 2019 ACS (microdata).

The data in Table 1 show that the allied health labor force is composed of over 2.3 million males (or 21 percent) and nearly 8.7 million females (or 79 percent). In comparison, the rest of the labor force,

excluding allied health professions, is composed of over 159 million males (or 50.2 percent) and over 157 million females (or 49.8 percent).

Table 1: United States Allied Health Labor Force by Type and Sex, 2019

Labor Force	Male	Percent	Female	Percent	Total
Allied Health Labor Force	2,317,183	21.0%	8,692,997	79.0%	11,010,180
Rest of Labor Force	159,277,089	50.2%	157,952,254	49.8%	317,229,343
Total	161,594,272	49.2%	166,645,251	50.8%	328,239,523

Table note: 2019 ACS (microdata).

Table 2 shows the race/ethnicity composition of the U.S. allied health labor force. Overall, individuals who belong to non-White race/ethnicity groups constitute a smaller percentage of the allied health labor force. Coupled with the data on Table 1, the allied health labor force is primarily White and predominantly female. For non-White race/ethnicity groups, the number and percentages of African Americans and Hispanics are nearly equal with 1,794,395 individuals (16.3 percent) being African American and 1,758,967 individuals (16.0 percent) being Hispanic. Asians and those individuals in the Other race/ethnicity categories make up just over one million individuals (9.5 percent) of the allied health labor force.

Table 2: Race/Ethnicity of the United States Allied Health Labor Force, 2019

Race/Ethnicity	Total	Percent
White	6,405,244	58.2%
African American	1,794,395	16.3%
Hispanic	1,758,967	16.0%
Asian	686,474	6.2%
Other	365,100	3.3%
Total	11,010,180	100.0%

Table note: 2019 ACS (microdata).

Demographic Analysis of the Texas Population

The population of Texas is also growing and becoming more diverse. These attributes provide for a large workforce and place the state in an advantageous position to compete in the global market. Texas is unique in that its demographic characteristics mirror those of the nation, while also differing in important ways. For example, the Texas population is younger than the national average. However, the Texas population is also aging. The percentage of the Texas population age 55 and older is increasing as the Baby Boom generation ages. In this section, a general overview of the current and future population of the state is provided. Discussion includes past population trends, current demographic characteristics, and future population projections.

The Current and Future Population of Texas

The current composition of the state's population is a snapshot of the ongoing demographic trends as evidenced by the population pyramids in Figure 8. The data in Figure 8 reveal four relevant trends: the growth of the state's population, the greater number of individuals in the older age categories, the progression of the Baby Boom cohort from the younger age categories into the older age categories, and the growth of younger Texans. The number of individuals 55 or older increased from 1,497,120 in 1960 to 6,654,179 in 2019, an increase from 15.6 percent of the total population in 1960 to 23.5 percent in 2019. In 2019, males accounted for 49.7 percent of the Texas population (14,054,001) and females accounted for 50.3 percent (14,250,595).

The Texas population will continue to grow and diversify. Figure 8 illustrates the projected population pyramid for Texas in 2050 along with a comparison of 2019 data.

Figure 8: Texas Population Pyramids, 2019-2050

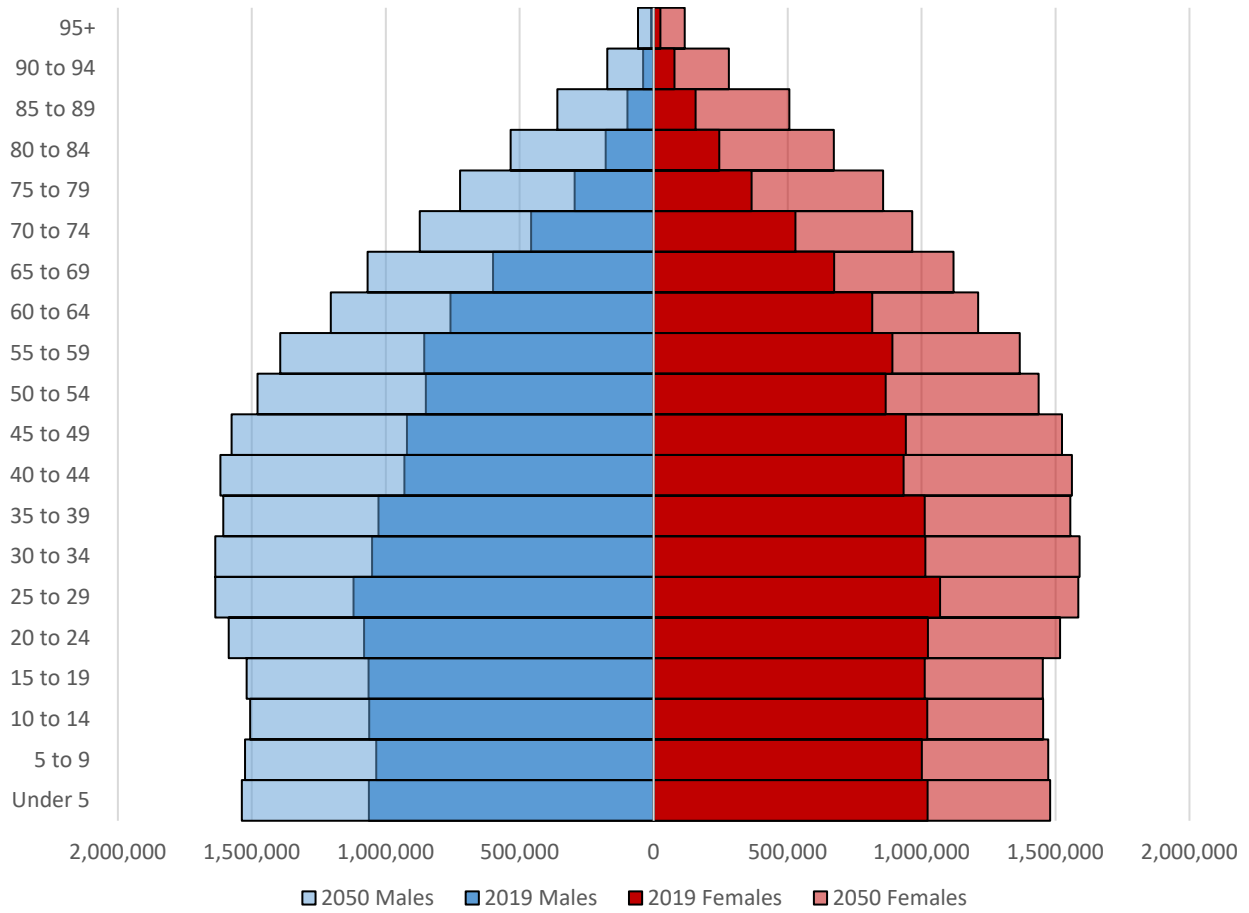


Figure note: Data are from 2018 Population Projections, Texas Demographic Center.

An ongoing trend not indicated by the population pyramids is the increase in the state’s racial and ethnic diversity. In 1980, approximately 66 percent of the Texas population was White, 21 percent was Hispanic, and 12 percent was African American. By 2019, the Texas population had diversified further with the proportion of Whites in the population decreasing and the proportion of Hispanics increasing. As illustrated in Figure 9, approximately 41 percent of the Texas population was White, 40 percent was Hispanic, 12 percent was African American, five percent was Asian, and two percent was Other.

Figure 9: Race/Ethnicity of the Texas Population, 2019

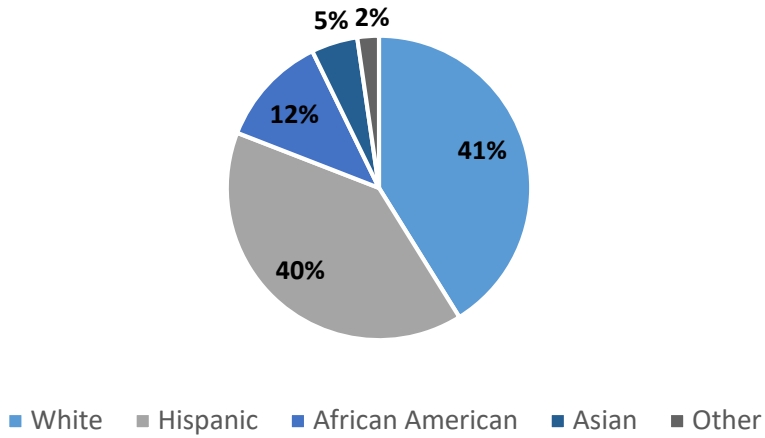


Figure note: 2018 Population Projections, Texas Demographic Center.

The 2050 Texas population will be more diverse. Projections show that approximately 29 percent of the 2050 Texas population will be White, 43 percent will be Hispanic, 13 percent will be African American, 12 percent will be Asian, and four percent will belong to the Other category.

Figure 10: Projected Race/Ethnicity of the Texas Population, 2050

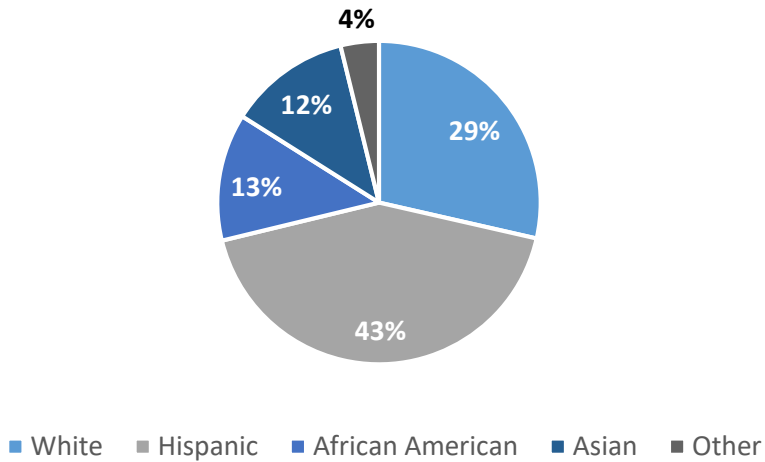


Figure note: 2018 Population Projections, Texas Demographic Center.

Demographic Analysis of the Texas Allied Health Labor Force

In this section, a detailed demographic analysis of the allied health labor force in Texas is provided. The following discussion includes an overview of labor force participation rates, demographic characteristics, average salaries and wages, and geographic distribution of the allied health labor force in Texas

In 2019, 863,450 individuals composed the allied health labor force in Texas. As shown on Figure 11, of the top 20 allied health occupations, the top five consist of Personal Care Aides, which made up the largest number with 150,117 individuals (17.4 percent), followed by Home Health Aides with 73,947 individuals (8.6 percent), Social Workers with 56,956 individuals (6.6 percent), Medical Assistants with 54,663 individuals (6.3 percent), and Dental Assistants with 40,764 individuals (4.7 percent).

Figure 11: Texas Allied Health Labor Force, 2019

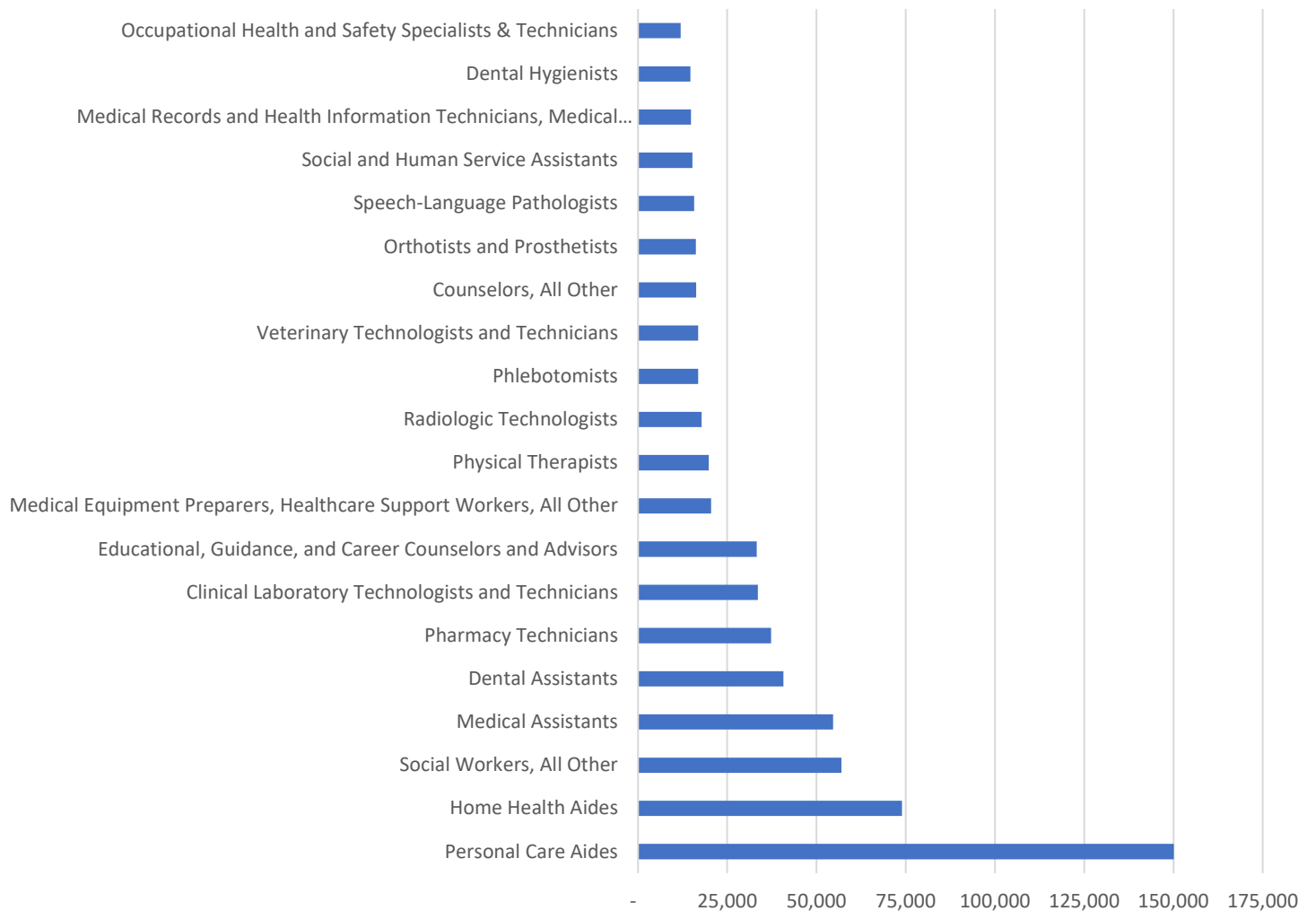


Figure note: 2019 ACS PUMS (microdata).

Figure 12 compares the number of male and female allied health professionals in Texas by occupation. As with the national data in the previous section, a large difference exists between the number of male and female professionals in allied health. The only notable exception in the selection below belongs to Occupational Health and Safety Specialists and Technicians. In this occupation, males make up 9,413 individuals (78.8 percent) and females make up 2,537 individuals (21.2 percent).

Figure 12: Texas Allied Health Labor Force by Type and Sex, 2019

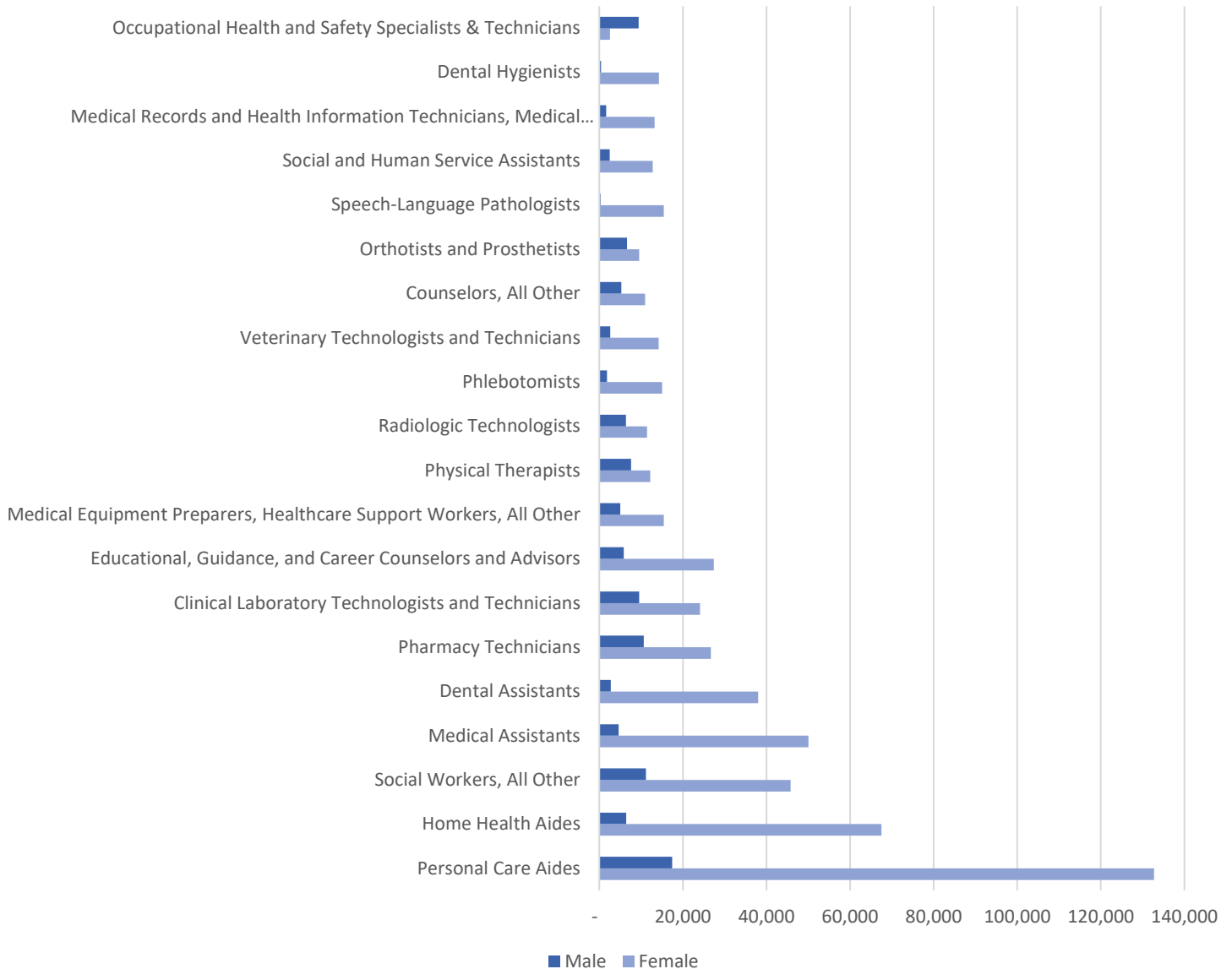


Figure note: 2019 ACS PUMS (microdata).

The data in Table 3 show that the Texas allied health labor force is composed of 171,185 males (or 19.8 percent) and 692,265 females (or 80.2 percent). In comparison, the rest of the labor force, excluding

allied health professions, is composed of over 8.6 million males (or 54.5 percent) and over 7.2 million females (or 45.5 percent).

Table 3: Texas Allied Health Labor Force by Type and Sex, 2019

Labor Force	Male	Percent	Female	Percent	Total
Allied Health Labor Force	171,185	19.8%	692,265	80.2%	863,450
Rest of Labor Force	8,623,986	54.5%	7,200,745	45.5%	15,824,731
Total	8,795,171	52.7%	7,893,010	47.3%	16,688,181

Table note: 2019 ACS (microdata).

Table 4 shows the race/ethnicity composition of the allied health labor force in Texas. Unlike the national data on Table 2, the numbers of non-Hispanic Whites and Hispanics are a lot closer at 333,297 individuals (38.6 percent) for the White race/ethnicity group and 316,657 individuals (36.7 percent) for the Hispanic race/ethnicity group. Coupled with the data on Table 3, the allied health labor force in Texas is primarily White, Hispanic, and predominantly female. For African Americans, 154,474 individuals (17.9 percent) comprise the allied health labor force. Finally, 59,022 individuals (6.8 percent) comprise the Asian and Other race/ethnicity categories of the Texas allied health labor force.

Table 4: Race/Ethnicity of the Texas Allied Health Labor Force, 2019

Race/Ethnicity	Total	Percent
White	333,297	38.6%
Hispanic	316,657	36.7%
African American	154,474	17.9%
Asian	40,057	4.6%
Other	18,965	2.2%
Total	863,450	100%

Table note: 2019 ACS (microdata).

Table 5 shows detailed breakouts for the 55 allied health occupations in Texas by labor force participation status for 2019. The data displayed on table 5 begins with the occupation title, followed by the following labor force status categories: employed, unemployed, not in the labor force, and total. For a detailed explanation of these labor force concepts please refer to the Data and Methodology section of this report.

Table 5: Labor Force Participation Status of the Allied Health Labor Force, 2019

Occupation Title	Employed	Unemployed	Not in the labor force	Total
Personal Care Aides	116,437	6,817	26,863	150,117
Home Health Aides	57,421	2,452	14,074	73,947
Social Workers, All Other	47,965	2,010	6,981	56,956
Medical Assistants	45,601	1,531	7,531	54,663
Dental Assistants	34,128	1,609	5,027	40,764
Pharmacy Technicians	31,855	1,080	4,355	37,290
Clinical Laboratory Technologists and Technicians	28,476	750	4,375	33,601
Educational, Guidance, and Career Counselors and Advisors	28,948	737	3,597	33,282
Medical Equipment Preparers, Healthcare Support Workers, All Other	16,882	896	2,651	20,429
Physical Therapists	18,691	71	1,059	19,821
Radiologic Technologists	16,280	230	1,306	17,816
Phlebotomists	14,199	425	2,239	16,863
Veterinary Technologists and Technicians	13,781	677	2,381	16,839
Counselors, All Other	13,674	145	2,442	16,261
Orthotists and Prosthetists	14,099	379	1,713	16,191
Speech-Language Pathologists	13,356	154	2,223	15,733
Social and Human Service Assistants	12,089	520	2,666	15,275
Medical Records and Health Information Technicians, Medical Records Specialists	12,564	82	2,201	14,847
Dental Hygienists	13,539	83	1,081	14,703
Occupational Health and Safety Specialists & Technicians	10,651	210	1,089	11,950
Respiratory Therapists	10,072	92	835	10,999
Dietitians and Nutritionists	10,037	52	830	10,919
Emergency Medical Technicians	9,650	78	788	10,516
Physician Assistants	9,814	226	367	10,407
Exercise Physiologists	8,639	124	1,462	10,225
Surgical Technologists	8,866	54	776	9,696
Physical Therapist Assistants, Physical Therapist Aides	8,363	76	1,035	9,474
Paramedics	8,336	181	891	9,408
Diagnostic Medical Sonographers	8,793	-	556	9,349
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	7,684	330	934	8,948
Occupational Therapists	8,043	49	731	8,823
Health Education Specialists, Community Health Workers, Community and Social Service Specialists, All Other	7,593	-	1,050	8,643

Occupation Title	Employed	Unemployed	Not in the labor force	Total
Athletic Trainers, Genetic Counselors, and Health Information Technologists and Medical Registrars	6,646	223	1,008	7,877
Opticians, Dispensing	6,242	147	927	7,316
Child, Family, and School Social Workers	6,411	-	372	6,783
Medical Transcriptionists	4,498	282	1,338	6,118
Psychiatric Technicians	4,806	-	410	5,216
Veterinary Assistants and Laboratory Animal Caretakers	4,347	125	246	4,718
Occupational Therapy Assistants, Occupational Therapy Aides	3,446	162	608	4,216
Cardiovascular Technologists and Technician	3,140	-	962	4,102
Healthcare Social Workers	3,247	432	391	4,070
Magnetic Resonance Imaging Technologists	3,459	137	212	3,808
Pharmacy Aides	3,334	40	293	3,667
Audiologists	2,868	-	54	2,922
Nuclear Medicine Technologists	2,166	121	277	2,564
Radiation Therapists	2,140	-	183	2,323
Mental Health and Substance Abuse Social Workers	795	-	231	1,026
Recreational Therapists	614	64	-	678
Marriage and Family Therapists	542	-	119	661
Rehabilitation Counselors	630	-	-	630
Total	725,857	23,853	113,740	863,450

Table note: 2019 ACS (microdata).

Table 6 rank orders the average wage or salary income for allied health labor force occupations by sex. For 2019, Cardiovascular Technologists and Technicians had the largest earnings for both males and females. The next highest paying occupations included Diagnostic Medical Sonographers, Nuclear Medicine Technologists, and Physician Assistants. Recalling the data presented in Figure 12, Home Health Aides and Personal Care Aides were among the allied health occupations with the most workers. Despite their large numbers for the allied health labor force in Texas, they are also among the lowest paid, with wage or salary income for males and females averaging between \$11,000 and \$16,000, respectively.

Table 6: Wages or Salary Income for Allied Health Labor Force by Sex, 2019

Occupation Title	Male	Female
Cardiovascular Technologists and Technicians	\$132,406	\$115,229
Diagnostic Medical Sonographers	\$129,261	\$112,917
Nuclear Medicine Technologists	\$153,188	\$80,755
Physician Assistants	\$125,864	\$76,485
Magnetic Resonance Imaging Technologists	\$52,528	\$81,983
Dental Hygienists	\$144,079	\$51,141
Occupational Therapists	\$75,202	\$53,091
Athletic Trainers, Genetic Counselors, and Health Information Technologists and Medical Registrars	\$50,483	\$68,966
Occupational Health and Safety Specialists & Technicians	\$46,088	\$78,832
Physical Therapists	\$100,702	\$58,780
Surgical Technologists	\$73,440	\$57,740
Respiratory Therapists	\$61,560	\$56,157
Speech-Language Pathologists	\$83,076	\$37,707
Radiologic Technologists	\$102,361	\$50,701
Paramedics	\$55,360	\$42,204
Pharmacy Aides	\$65,115	\$43,809
Mental Health and Substance Abuse Social Workers	\$61,619	\$49,507
Audiologists	\$70,580	\$40,750
Orthotists and Prosthetists	\$48,891	\$42,074
Dietitians and Nutritionists	\$36,679	\$42,903
Exercise Physiologists	\$23,435	\$42,157
Physical Therapist Assistants, Physical Therapist Aides	\$48,054	\$38,136
Radiation Therapists	\$42,439	\$37,391
Medical Records and Health Information Technicians, Medical Records Specialists	\$52,868	\$34,258
Clinical Laboratory Technologists and Technicians	\$32,752	\$39,657
Psychiatric Technicians	\$25,950	\$40,211
Rehabilitation Counselors	\$36,874	\$34,678
Opticians, Dispensing	\$46,949	\$30,560
Emergency Medical Technicians	\$45,266	\$33,541
Educational, Guidance, and Career Counselors and Advisors	\$47,645	\$32,424
Medical Equipment Preparers, Healthcare Support Workers, All Other	\$41,968	\$31,131
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	\$32,628	\$34,547
Counselors, All Other	\$24,893	\$34,690
Child, Family, and School Social Workers	\$33,052	\$33,169
Social Workers, All Other	\$41,820	\$28,688
Health Education Specialists, Community Health Workers, Community and Social Service Specialists, All Other	\$35,187	\$29,671
Dental Assistants	\$33,982	\$28,381
Medical Assistants	\$38,082	\$26,161

Occupation Title	Male	Female
Pharmacy Technicians	\$26,509	\$27,655
Social and Human Service Assistants	\$27,904	\$26,785
Healthcare Social Workers	\$35,410	\$22,230
Phlebotomists	\$29,356	\$24,546
Occupational Therapy Assistants, Occupational Therapy Aides	\$29,633	\$23,982
Recreational Therapists	\$25,502	\$23,914
Marriage and Family Therapists	\$17,719	\$21,387
Veterinary Assistants and Laboratory Animal Caretakers	\$18,700	\$20,284
Veterinary Technologists and Technicians	\$15,405	\$16,847
Medical Transcriptionists	\$14,745	\$11,811
Personal Care Aides	\$22,728	\$9,091
Home Health Aides	\$10,958	\$11,297

Table note: 2019 ACS (microdata). Totals reflect inflation adjusted for 2019. Totals are ranked in descending order by Total.

Figure 13 shows the frequency of allied health occupations entry-level education. These data summarize the typical level of education that most workers need to enter this occupation and how often they appear in Table 7 on the following page. These data were obtained using a combination of U.S. Bureau of Labor Statistics Occupational Outlook Handbook data, Texas labor market information produced by the Texas Workforce Commission, and ACS PUMS (microdata). Figure 13 shows that most occupations require a postsecondary non-degree award, an associate's degree, or master's degree.

Figure 13: Frequency of Allied Health Occupations Entry-Level Education Requirements

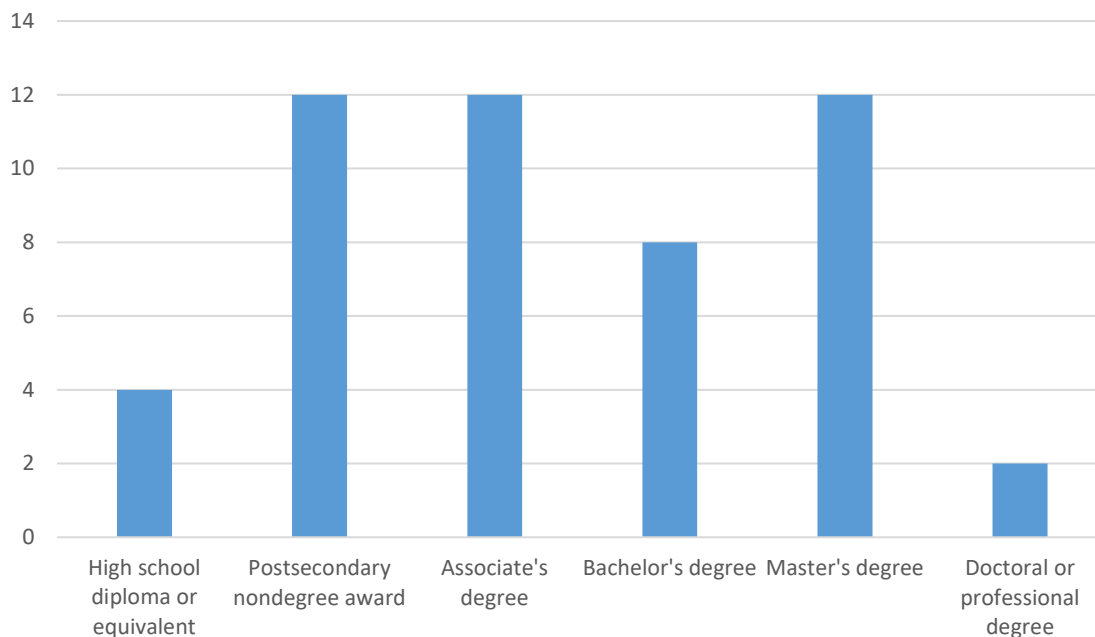


Figure notes: 2019 ACS (microdata). Level of education provided by the U.S. Bureau of Labor Statistics Occupational Outlook Handbook and Texas labor market information produced by the Texas Workforce Commission.

The data in Table 7 detail the Texas allied health labor force by designated education level of occupations for 2019.

Table 7: Texas Allied Health Labor Force by Designated Entry-Level Education of Occupations, 2019

Occupation Title	Total	Level of Education
Personal Care Aides	150,117	High school diploma or equivalent
Home Health Aides	73,947	High school diploma or equivalent
Social Workers, All Other	56,956	Master's degree
Medical Assistants	54,663	Postsecondary non-degree award
Dental Assistants	40,764	Postsecondary non-degree award
Pharmacy Technicians	37,290	High school diploma or equivalent
Clinical Laboratory Technologists and Technicians	33,601	Bachelor's degree
Educational, Guidance, and Career Counselors and Advisors	33,282	Master's degree
Medical Equipment Preparers, Healthcare Support Workers, All Other	20,429	Postsecondary non-degree award
Physical Therapists	19,821	Doctoral or professional degree
Radiologic Technologists	17,816	Associate degree
Phlebotomists	16,863	Postsecondary non-degree award
Veterinary Technologists and Technicians	16,839	Associate degree
Counselors, All Other	16,261	Master's degree
Orthotists and Prosthetists	16,191	Master's degree
Speech-Language Pathologists	15,733	Master's degree
Social and Human Service Assistants	15,275	High school diploma or equivalent
Medical Records and Health Information Technicians, Medical Records Specialists	14,847	Postsecondary non-degree award
Dental Hygienists	14,703	Associate degree
Occupational Health and Safety Specialists & Technicians	11,950	Bachelor's degree
Respiratory Therapists	10,999	Associate degree
Dietitians and Nutritionists	10,919	Bachelor's degree
Emergency Medical Technicians	10,516	Postsecondary non-degree award
Physician Assistants	10,407	Master's degree
Exercise Physiologists	10,225	Bachelor's degree
Surgical Technologists	9,696	Postsecondary non-degree award
Physical Therapist Assistants, Physical Therapist Aides	9,474	Associate degree
Paramedics	9,408	Postsecondary non-degree award
Diagnostic Medical Sonographers	9,349	Associate degree
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	8,948	Bachelor's degree
Occupational Therapists	8,823	Master's degree
Health Education Specialists, Community Health Workers, Community and Social Service Specialists, All Other	8,643	Bachelor's degree

Occupation Title	Total	Level of Education
Athletic Trainers, Genetic Counselors, and Health Information Technologists and Medical Registrars	7,877	Bachelor's degree
Opticians, Dispensing	7,316	Postsecondary non-degree award
Child, Family, and School Social Workers	6,783	Master's degree
Medical Transcriptionists	6,118	Postsecondary non-degree award
Psychiatric Technicians	5,216	Associate degree
Veterinary Assistants and Laboratory Animal Caretakers	4,718	Postsecondary non-degree award
Occupational Therapy Assistants, Occupational Therapy Aides	4,216	Associate degree
Cardiovascular Technologists and Technician	4,102	Associate degree
Healthcare Social Workers	4,070	Master's degree
Magnetic Resonance Imaging Technologists	3,808	Associate degree
Pharmacy Aides	3,667	Postsecondary non-degree award
Audiologists	2,922	Doctoral or professional degree
Nuclear Medicine Technologists	2,564	Associate degree
Radiation Therapists	2,323	Associate degree
Mental Health and Substance Abuse Social Workers	1,026	Master's degree
Recreational Therapists	678	Bachelor's degree
Marriage and Family Therapists	661	Master's degree
Rehabilitation Counselors	630	Master's degree
Total	863,450	

Table note: 2019 ACS (microdata). Level of education provided by the U.S. Bureau of Labor Statistics Occupational Outlook Handbook and Texas labor market information produced by the Texas Workforce Commission.

Conclusion

This report has provided a demographic overview of the allied health labor force in Texas. National data illustrate how an aging population is changing the demographic and socioeconomic landscape. Analysis of the Texas population highlights the growth of the state's population, particularly the increase in the state's Hispanic population. Additionally, the aging of the Baby Boom cohort presents immediate challenges for allied health professions. The population of Texas will continue to age, diversify, and grow. Population change presents challenges and opportunities for allied health workers, educators, and employers. Employers must understand the implications for allied health workers and the population associated with unprecedented demographic and societal changes.

References

- Advisory Committee on Interdisciplinary, Community-Based Linkages. (2018). *Enhancing Community-Based Clinical Training Sites: Challenges and Opportunities: 16th Annual Report to the Secretary of the U.S. Department of Health and Human Services and the U.S. Congress.* . Health Resources and Services Administration.
- American Medical Association. (2006). Limited licensure health care provider training and certification standards . In: Reports of board of trustees [Internet]. *AMA*.
- American Medical Association. (2013). *Allied Health Professionals Survey [Internet]*. Retrieved from American Medical Association: <http://www.ama-assn.org/resources/doc/omss/final-allied-health-professionals-survey-results.pdf>
- American Medical Association. (2021). *American Medical Association*. Retrieved from The AMA's Health Care Careers Directory: <http://www.ama-assn.org/ama/pub/education-careers/careers-health-care.shtml>
- American Scholar Group. (2021). *Health Care Worker Shortage in America*. Retrieved from American Scholar Group: <https://www.americanscholargroup.com/health-care-worker-shortage-in-america/>
- Arena, R., Goldberg, L., Ingersoll, C., Larsen, D., & Shelledy, D. (2011). Research in the Allied Health Professions: Why Fund It? *Journal of Allied Health*, 161-166.
- Association of Schools Advancing Health Professions. (2021). *What is Allied Health?* Retrieved from Association of Schools Advancing Health Professions: <https://www.asahp.org/what-is/>
- Auerbach, D., Buerhaus, P., & Staiger, D. (2015). Will the RN Workforce Weather the Retirement of the . *Medical Care*.
- Bates, I., John, C., Bruno, A., Fu, P., & Aliabadi, S. (2016). An analysis of the global pharmacy workforce capacity. *Human Resources for Health* .
- Buerhaus, P., Skinner, L., Auerbach, D., & Staiger, D. (2017). Buerhaus. *Journal of Nursing Regulation*.
- Centers for Disease Control and Prevention. (2013). *The state of aging and health in America 2013*. Centers for Disease Control and Prevention.
- Centers for Medicare and Medicaid Services. (2017). *Medicare Program – general information.* . Centers for Medicare and Medicaid Services.
- Colby, S., & Ortman, J. (2014). *Projections of the Size and Composition of the U.S. Population: 2014*. U.S. Census Bureau.
- Flaherty, E., & Bartels, S. (2019). Addressing the Community-Based Geriatric Healthcare Workforce Shortage by Leveraging the Potential of Interprofessional Teams. *Journal of the American Geriatrics Society*, 400-408.

- Flaherty, E., & Bartels, S. (2020). Addressing the Community-Based Geriatric Healthcare Workforce Shortage by Leveraging the Potential of Interprofessional Teams. *Journal of the American Geriatrics Society* .
- Jaeger, F. N., Bechir, M., Moto, D. D., & Utzinger, J. (2018). Challenges and opportunities for healthcare workers in a rural district of Chad. *BMC Health Services Research*, <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-017-2799-6>.
- Kirch, D., & Petelle, K. (2017). Addressing the physician shortage. *JAMA*.
- Landivar, L. C. (2013). *Men in Nursing Occupations*. U.S. Census Bureau.
- Lopes, M. A., Almeida, A. S., & Almada-Lobo, B. (2015). Handling healthcare workforce planning with care: where do we stand? *Human Resources for Health* .
- Mackintosh, C. (1997). A Historical Study of Men in Nursing. *Journal of Advanced Nursing*, 232-236.
- Mangine, D. (2017). *Simulation in Healthcare Education*. Retrieved from THE HISTORY OF ALLIED HEALTH PROFESSIONS: <https://blog.simtalkblog.com/blog/2017/11/02/history-allied-health-professions>
- Mase, D. (2009). Allied health-today and tomorrow. *Journal of Allied Health*.
- McLaughlin, R., O'Brien, C., Weinstein, M., Anderson, R., Cameron, J., Romig, B., . . . O'Sullivan-Maillet, J. (2019). Clinical Education in Transition: Recommendations and Strategies, A Report of the ASAHP Clinical Education Task Force. *Journal of Allied Health*.
- National Center for Advancing Translational Sciences. (2021). *Training and Mentoring Resources*. Retrieved from <https://ncats.nih.gov/ctsa/training/resources>: <https://ncats.nih.gov/ctsa/training/resources>
- Pruitt, S., & Epping-Jordan, J. (2005). Preparing the 21st century global healthcare workforce. *BMJ*.
- Robbins, A. (1972). Allied Health Manpower — Solution or Problem? *N Engl J Med*.
- Rush University. (2021). *What is Allied Health?* Retrieved from Rush University: <https://www.rushu.rush.edu/news/what-allied-health>
- Scope of Practice Policy. (2021). *Scope of Practice Policy*. Retrieved from Scope of Practice Policy: <https://scopeofpracticepolicy.org/>
- Stagnitti, K., Schoo, A., Reid, C., & Dunbar, J. (2005). Retention of allied health professionals in the south-west . *Aust. J. Rural Health*, 364-365.
- Texas Demographic Center. (2019). Texas Population Projections 2010 to 2050. Texas Demographic Center.
- The University of Texas Health Science Center at San Antonio. (2021). *UT Health San Antonio*. Retrieved from School of Health Professions: <http://catalog.uthsca.edu/schoolofhealthprofessions/>
- Tichenor, M., & Sridhar, M. (2019). Metric partnerships: global burden of disease estimates within the World Bank, the World Health Organisation and the Institute for Health Metrics and Evaluation. *Wellcome Open Research*.

- U.S. Census Bureau. (2020). *Asian American and Pacific Islander Heritage Month: May 2020*. Retrieved from United States Census Bureau: <https://www.census.gov/newsroom/facts-for-features/2020/aian.html>
- U.S. Department of Health, Education, & Welfare. (1966). *The Allied Health Professions Personnel Training Act of 1966 As Amended*. U.S. Department of Health, Education, & Welfare.
- United States Library of Congress. (2010). *PUBLIC LAW 111–148*. Retrieved from PUBLIC LAW 111–148: <https://www.congress.gov/111/plaws/publ148/PLAW-111publ148.pdf>
- University of California, S. F. (2021). *Healthforce Center at UCSF*. Retrieved from Healthforce Center at UCSF: <https://healthforce.ucsf.edu/research>
- Whelan, J. (2017). *Workforce Issues: Where Did All the Nurses Go?* University of Pennsylvania.
- World Health Organization. (2007). *Strengthening Health Systems To Improve Health Outcomes*. World Health Organization.
- World Health Organization. (2015). *World report on ageing and health*. World Health Organization.

Appendix A: Allied Health Occupations Matrix

This appendix illustrates the allied health labor force using the 55 occupations analyzed using the processes described in the Data Sources and Methodology section in this report.

Detail SOC Code	SOC Occupation Title	BLS level of education	ASAHP (51)	CHP (55)	NHS (51)	UIS (55)	BLS (55)	ACS PUMS (55)	TWC Wages Report (55)	TWC Staffing Patterns Report (51)
19-5000	Occupational Health and Safety Specialists and Technicians									
19-5011	Occupational Health and Safety Specialists	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓
19-5012	Occupational Health and Safety Technicians	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓
21-1010	Counselors									
21-1012	Educational, Guidance, and Career Counselors and Advisors	Master's degree	✓	✓	✓	✓	✓	✓	✓	✓
21-1013	Marriage and Family Therapists	Master's degree	✓	✓	✓	✓	✓	✓	✓	✓
21-1015	Rehabilitation Counselors	Master's degree	✓	✓	✓	✓	✓	✓	✓	✓
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓
21-1019	Counselors, All Other	Master's degree	✓	✓	✓	✓	✓	✓	✓	✓
21-1020	Social Workers									
21-1021	Child, Family, and School Social Workers	Master's degree		✓		✓	✓	✓	✓	✓
21-1022	Healthcare Social Workers	Master's degree		✓		✓	✓	✓	✓	✓
21-1023	Mental Health and Substance	Master's degree		✓		✓	✓	✓	✓	✓

Detail SOC Code	SOC Occupation Title	BLS level of education	ASAHP (51)	CHP (55)	NHS (51)	UIS (55)	BLS (55)	ACS PUMS (55)	TWC Wages Report (55)	TWC Staffing Patterns Report (51)
	Abuse Social Workers									
21-1029	Social Workers, All Other	Master's degree		✓		✓	✓	✓	✓	✓
21-1090	Miscellaneous Community and Social Service Specialists									
21-1091	Health Education Specialists	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓
21-1093	Social and Human Service Assistants	High school diploma or equivalent	✓	✓	✓	✓	✓	✓	✓	✓
21-1094	Community Health Workers	High school diploma or equivalent	✓	✓	✓	✓	✓	✓	✓	✓
21-1099	Community and Social Service Specialists, All Other	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1030	Dietitians and Nutritionists									
29-1031	Dietitians and Nutritionists	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1070	Physician Assistants									
29-1071	Physician Assistants	Master's degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1120	Therapists									
29-1122	Occupational Therapists	Master's degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1123	Physical Therapists	Doctoral or professional degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1124	Radiation Therapists	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1125	Recreational Therapists	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1126	Respiratory Therapists	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1127	Speech-Language Pathologists	Master's degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1128	Exercise Physiologists	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓

Detail SOC Code	SOC Occupation Title	BLS level of education	ASAHP (51)	CHP (55)	NHS (51)	UIS (55)	BLS (55)	ACS PUMS (55)	TWC Wages Report (55)	TWC Staffing Patterns Report (51)
29-1180	Audiologists									
29-1181	Audiologists	Doctoral or professional degree	✓	✓	✓	✓	✓	✓	✓	✓
29-1290	Miscellaneous Healthcare Diagnosing or Treating Practitioners									
29-1292	Dental Hygienists	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-2010	Clinical Laboratory Technologists and Technicians						✓	✓		
29-2010	Clinical Laboratory Technologists and Technicians	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓
29-2030	Diagnostic Related Technologists and Technicians									
29-2031	Cardiovascular Technologists and Technician	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-2032	Diagnostic Medical Sonographers	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-2033	Nuclear Medicine Technologists	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-2034	Radiologic Technologists	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-2035	Magnetic Resonance Imaging Technologists	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-2040	Emergency Medical Technicians and Paramedic									
29-2040	EMTs and Paramedics	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓

Detail SOC Code	SOC Occupation Title	BLS level of education	ASAHP (51)	CHP (55)	NHS (51)	UIS (55)	BLS (55)	ACS PUMS (55)	TWC Wages Report (55)	TWC Staffing Patterns Report (51)
29-2050	Health Practitioner Support Technologists and Technicians									
29-2052	Pharmacy Technicians	High school diploma or equivalent	✓	✓	✓	✓	✓	✓	✓	✓
29-2053	Psychiatric Technicians	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-2055	Surgical Technologists	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓
29-2056	Veterinary Technologists and Technicians	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
29-2070	Medical Records Specialists									
29-2071	Medical Records and Health Information Technicians	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓
29-2072	Medical Records Specialists	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓
29-2080	Opticians, Dispensing									
29-2081	Opticians, Dispensing	High school diploma or equivalent	✓	✓	✓	✓	✓	✓	✓	✓
29-2090	Miscellaneous Health Technologists and Technicians									
29-2091	Orthotists and Prosthetists	Master's degree	✓	✓	✓	✓	✓	✓	✓	✓
29-9090	Miscellaneous Health Practitioners and Technical Workers									
29-9091	Athletic Trainers	Bachelor's degree	✓	✓	✓	✓	✓	✓	✓	✓
29-9092	Genetic Counselors	Master's degree	✓	✓	✓	✓	✓	✓	✓	✓

Detail SOC Code	SOC Occupation Title	BLS level of education	ASAHP (51)	CHP (55)	NHS (51)	UIS (55)	BLS (55)	ACS PUMS (55)	TWC Wages Report (55)	TWC Staffing Patterns Report (51)
29-9098	Health Information Technologists and Medical Registrars	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓
31-1120	Home Health and Personal Care Aides									
31-1120	Home Health and Personal Care Aides	High school diploma or equivalent	✓	✓	✓	✓	✓	✓	✓	✓
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides									
31-2011	Occupational Therapy Assistants	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
31-2012	Occupational Therapy Aides	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
31-2020	Physical Therapist Assistants and Aides									
31-2021	Physical Therapist Assistants	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
31-2022	Physical Therapist Aides	Associate degree	✓	✓	✓	✓	✓	✓	✓	✓
31-9090	Miscellaneous Healthcare Support Occupations									
31-9091	Dental Assistants	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓
31-9092	Medical Assistants	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓
31-9094	Medical Transcriptionists	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓

Detail SOC Code	SOC Occupation Title	BLS level of education	ASAHP (51)	CHP (55)	NHS (51)	UIS (55)	BLS (55)	ACS PUMS (55)	TWC Wages Report (55)	TWC Staffing Patterns Report (51)
31-9095	Pharmacy Aides	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	High school diploma or equivalent	✓	✓	✓	✓	✓	✓	✓	✓
31-9097	Phlebotomists	Postsecondary non-degree award	✓	✓	✓	✓	✓	✓	✓	✓

Table note: Data are from Standard Occupational Classification (SOC) system codes, 2018; U.S. Bureau of Labor Statistics; Association of Schools Advancing Health Professions (ASAHP), 2021; Center for Health Professions (CHP), 2021; National Health Service (NHS), 2021; Department of Allied Health at the University of Illinois in Springfield (UIS), 2021; 2019 ACS PUMS (microdata); Texas Workforce Commission (TWC)

Texas Workforce Investment Council

System Partners

Economic Development and Tourism
Texas Department of Criminal Justice
Texas Education Agency
Texas Health and Human Services Commission

Texas Higher Education Coordinating Board
Texas Juvenile Justice Department
Texas Veterans Commission
Texas Workforce Commission

Members

Mark Dunn (Chair), Lufkin
Rick Rhodes (Vice Chair), Austin
Gina Aguirre Adams, Jones Creek
Joe Arnold, Muldoon
Jesse Gatewood, Corpus Christi
Lindsey Geeslin, Waco
Lauren Gore, Houston
Thomas Halbouty, Southlake
Michael Hinojosa, Dallas
John Martin, San Antonio
Wayne Oswald, Houston
Paul Puente, Houston
Richard Rhodes, Austin
Brandon Willis, Beaumont
Harrison Keller, Austin
Mike Morath, Austin
Ed Serna, Austin
Cecile Young, Austin
Adriana Cruz, Austin

Representing

Business and Industry
Community-Based Organizations
Business and Industry
Education
Labor
Labor
Business and Industry
Business and Industry
Education
Labor
Business and Industry
Labor
Education
Labor
Texas Higher Education Coordinating Board
Texas Education Agency
Texas Workforce Commission
Texas Health and Human Services Commission
Economic Development and Tourism, Office of
the Governor

Texas Workforce Investment Council
1100 San Jacinto, Suite 1.100
Austin, Texas 78701
<https://gov.texas.gov/organization/twic>