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# San Antonio's Health Care And Bioscience Industry

## ECONOMIC IMPACT IN 2009



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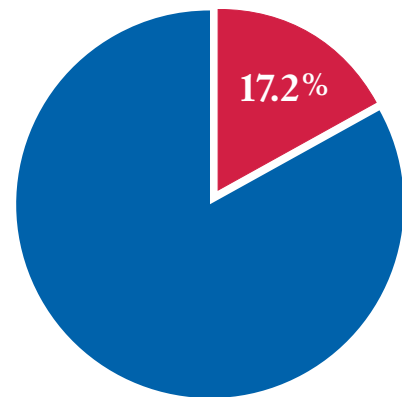
*Providing Greater Advocacy for the  
Health Care & Bioscience Industry*



## Highlights

- The Health Care and Bioscience industry continues as a **dominant force in the San Antonio economy**. Its economic impact in 2009 was **\$18.9 billion** measured conservatively, and approximately **\$24.5 billion** by a more comprehensive estimate.
- By the more comprehensive estimate, the industry paid **\$6.5 billion in wages and salaries** to **141,251 employees** in 2009.
- **One of every six** San Antonio employees works in the Health Care and Bioscience industry.
- The Health Care and Bioscience industry has added nearly **33,000 net new jobs** over the past decade, fueling San Antonio’s growth.
- Recent developments in military medicine and the bioscience sector point to a **bright future** for this industry in San Antonio.

### Health Care and Bioscience: 1/6 of the San Antonio Workforce



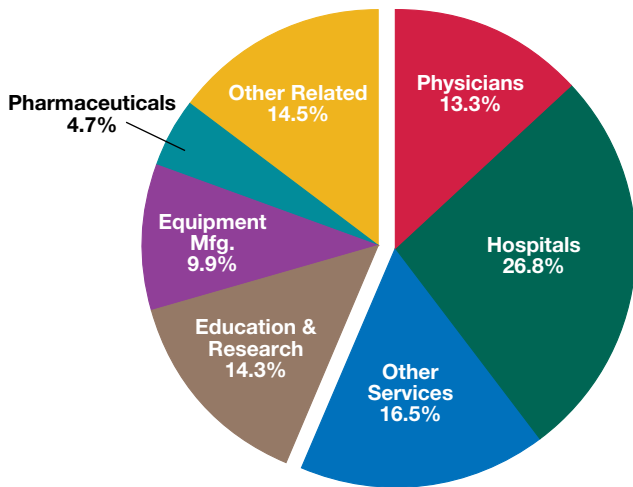
*Comprehensive Estimates*

The Health Care and Bioscience Industry  
Economic Impact Study  
was conducted by  
Richard V. Butler, Ph.D.  
and  
Mary E. Stefl, Ph.D.,  
both professors at Trinity University

## Overview

The Health Care and Bioscience industry is both large and diverse. It includes a wide variety of direct health care services as well as industries related to the provision of health and medical care.

### The Health Care and Bioscience Industry in 2009



*Comprehensive Estimates*

**Direct health care services** include the care provided in hospitals, physicians’ offices, nursing homes, the offices and clinics of a variety of other health care providers, and various other outpatient and ambulatory care settings. In San Antonio, health services include both civilian and military medicine, a Veterans Administration medical center, and a variety of governmental, for-profit and non-profit operations and facilities.

**Related industries** complement and support the provision of medical and health care. These industry sectors include health insurance carriers, pharmaceutical companies, medical equipment producers and manufacturers, civilian and military medical education, biomedical research organizations, residential care and social service providers, and a variety of related endeavors.

## The Current Study

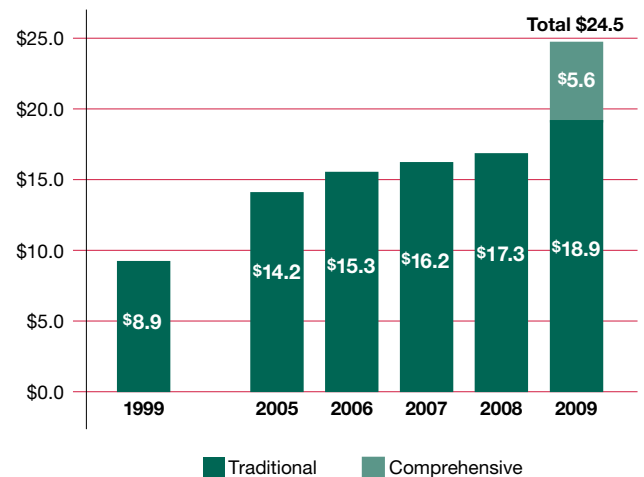
Previous versions of this study have not included the impact of the University of Texas Health Science Center at San Antonio (UTHSCSA), some elements of the military medical presence in the region, and the multiplier effects of the goods and services local Health Care and Bioscience businesses sell or deliver to customers and patients outside the region.

This year’s version attempts - for the first time - to include rough estimates of these important contributors to the San Antonio economy. This expanded definition of the industry is represented in the “comprehensive” estimates. To facilitate comparisons with past reports, “traditional” estimates using the previous industry definition are also reported.

## Overall Size

Measured by the dollar volume of final sales of its products and services, the economic impact of San Antonio’s Health Care and Bioscience Industry in 2009 totaled \$24.5 billion by the comprehensive estimate (\$18.9 billion by the traditional method, which is the measure most useful for comparisons with the recent past). The \$18.9 billion figure represents a healthy 9.1% increase from the 2008 level, and it is more than double the size of the industry a decade ago.

## Overall Economic Impact (Billions)

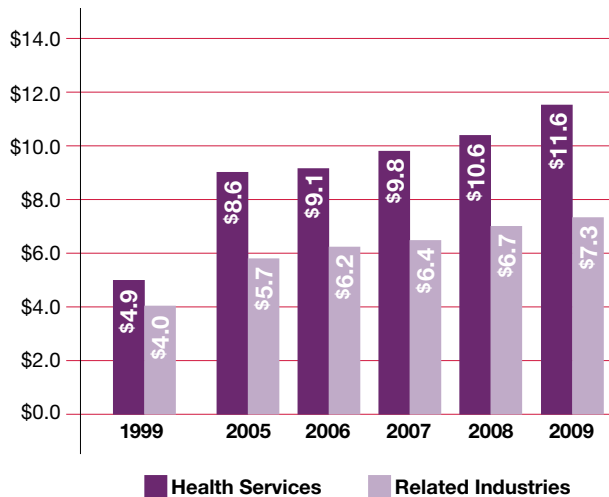




*“83% growth since 1999 can only be described as robust.”*

The impact of direct Health Services has been consistently higher than that of the Related Industries. The Health Services sector has grown steadily over time, and is now well more than double its 1999 size. The Related Industries have also grown steadily over the decade, though at a less rapid rate. Still, 83% growth since 1999 can only be described as robust.

### Economic Impact of the Sectors (Billions)



*Traditional Method*

*continued on next page*





*“In 2009, a total of 141,251 people worked in the industry.”*

## One-Sixth Of The San Antonio Workforce

In 2009, a total of 141,251 people worked in the Health Care and Bioscience industry. This represents 17.2% of the total San Antonio workforce. 70% of these employees were involved in the direct provision of health and medical services; the remaining 30% were employed in related industries.

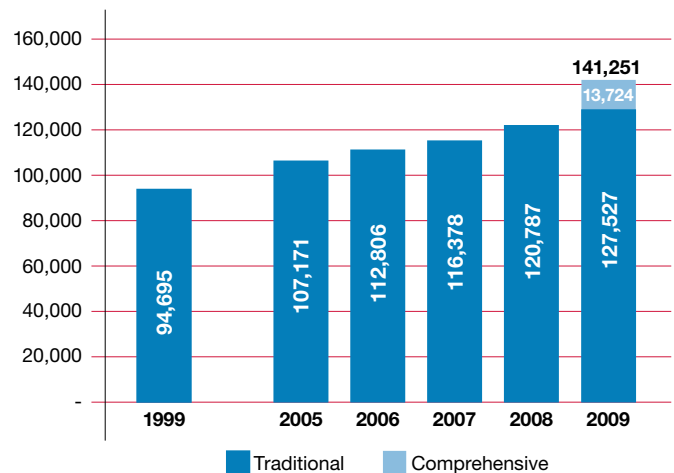
Looking at the traditional estimates for a comparison over time, the 127,527 employees in the narrower definition of the industry represent a 5.6% increase over the previous year. This is especially impressive in a slowing economy. The industry generated 6,740 net new jobs in 2009.

Looking at the decade as a whole, the industry added 32,832 net new jobs, an increase of 35%. Employment in Services and Related Industries grew at about the same pace, maintaining the balance between the two sectors.

*“The industry generated 6,740 net new jobs in 2009.”*



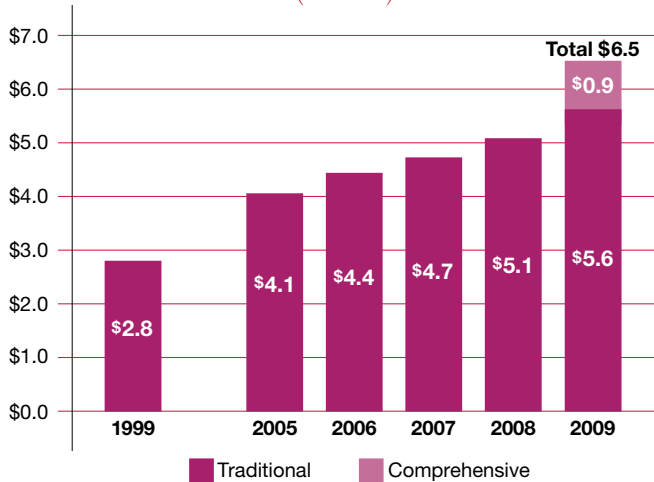
### Number of Employees



# A Growing Annual Payroll

The total annual payroll in Health Care and Bioscience (by the comprehensive estimate) was \$6.5 billion in 2009. Looking at the traditional definition of the industry, payroll grew by 9.2% over the previous year; it doubled over the decade.

**Annual Payroll**  
(Billions)



## An Annual Salary Well Above The San Antonio Average

Individuals employed in the Health Care and Bioscience Industry earned, on average, \$45,793 in 2009. This is almost 16% above the 2009 average of \$39,575 for all workers in San Antonio.

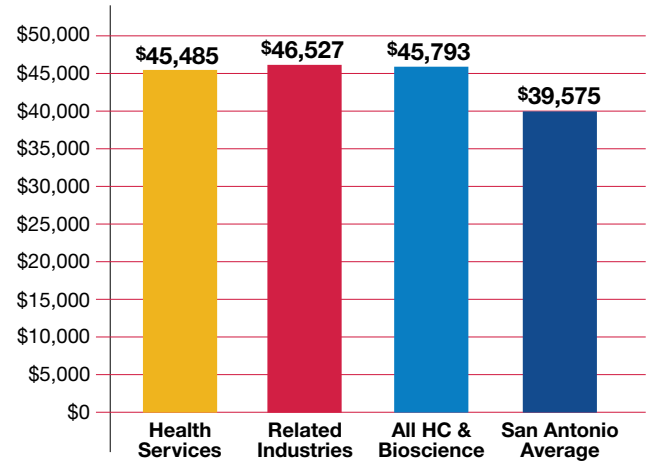
Annual incomes of workers in the Health Services sector averaged \$45,485. The average salary for the Related Industries sector was \$46,527.

These figures include only direct wage payments. Total compensation, which includes benefits, would be considerably higher.

In interpreting these averages, it is important to note that employees in the Health Care and Bioscience sector include not just well-paid health care providers and scientists but also support staff of various types. Also, since the employment figures include both full-time and part-time employees, the average salary reported here is no doubt lower than that received by a typical full-time employee.

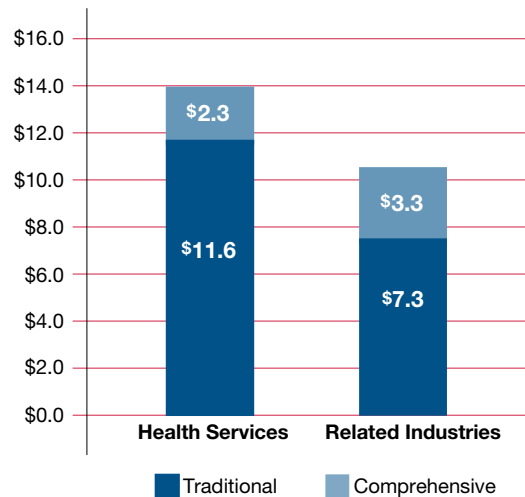
It is also important to note that the inclusion of the UTHSCSA and the military medical functions in the comprehensive estimate resulted in the addition of many well-paid professionals to the group for which these averages are calculated. That is the principal reason why average salaries in the Related Industries sector are substantially greater than those reported in the 2007 version of this study.

**2009 Average Salaries**  
Comprehensive Estimates



## A Closer Look At The Two Sectors

**Impact of the Sectors 2009**  
(Billions)



The size or impact of the Health Services sector has always been larger than the Related Industries sector, and that difference remains when the comprehensive definition of the industry is used. To better understand the diversity of the industry, a more detailed look at these sectors individually would be helpful.

# San Antonio Healthcare Construction Projects



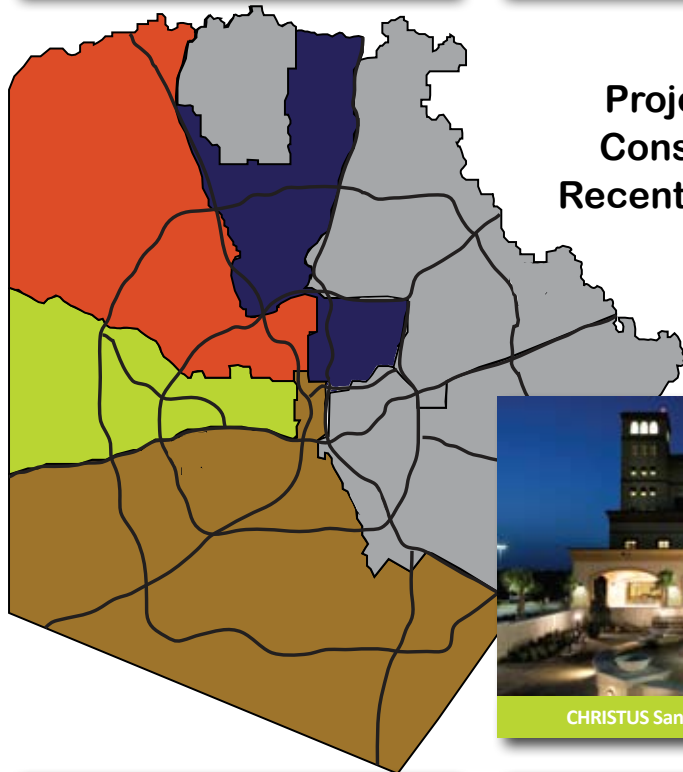
The Medical Arts & Research Center (MARC)



Tower at University Hospital



Remington Medical Resorts



Projects Under Construction or Recently Completed



START Center for Cancer Care



CHRISTUS Santa Rosa Westover Hills



Mission Trail Baptist Hospital



San Antonio Military Medical Center (SAMMC)



University Hospital Clinical Services



Texas Center for Infectious Disease Hospital

*\*Only partial listing of projects shown.*

*\*\*This page provided courtesy of Melba Romero/S.A. HC+B Magazine*

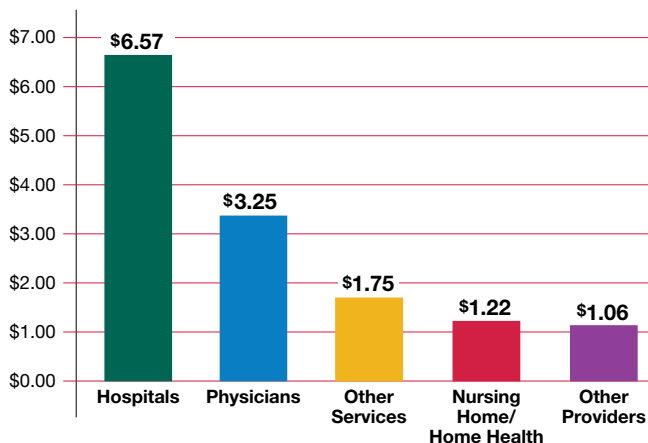
*“the economic impact of hospitals has increased by 147% over the past decade”*



## The Health Services Sector

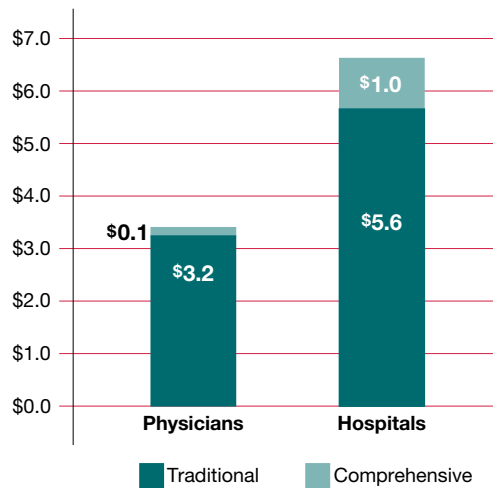
The Health Services sector includes a wide range of health care professionals and businesses providing direct care to patients. Within that sector, there are five major groups: hospitals; physicians; ambulatory and other services, including laboratories; nursing and home health services providers; and other providers of health services (dentists, therapists, optometrists, chiropractors and others).

### Impact of Selected Health Services in 2009 (Billions)



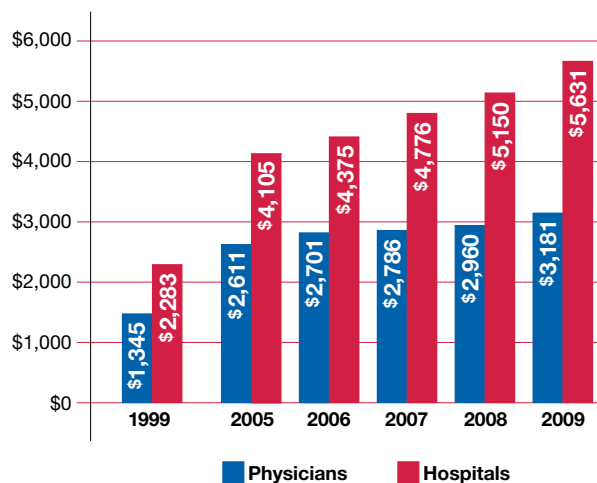
Comprehensive Estimates

### Impact of Physicians and Hospitals in 2009



Over the 10-year period shown in the chart below, both have more than doubled in size: the economic impact of hospitals has increased by 147% and that of physicians has jumped by 136%.

### Size of the Physicians and Hospitals Sectors (Millions)



Traditional Method



*“Related Industries sector incorporates a variety of businesses”*

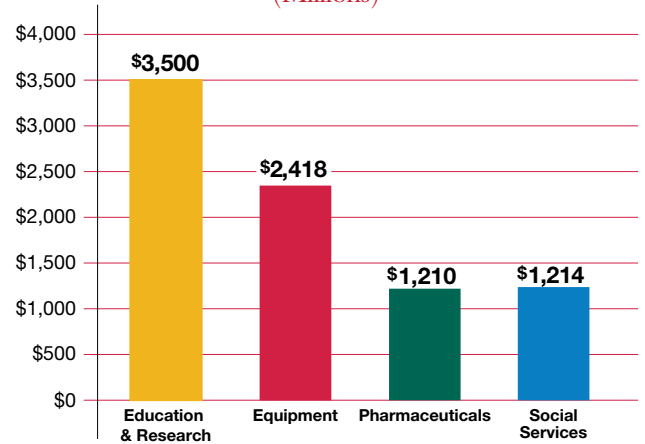


## Related Industries

The Related Industries sector incorporates a variety of businesses that support and complement the direct provision of health care services. The chart below shows the economic impact of some of the major industry groups in this sector.

### Economic Impact of Selected Related Industries in 2009

(Millions)

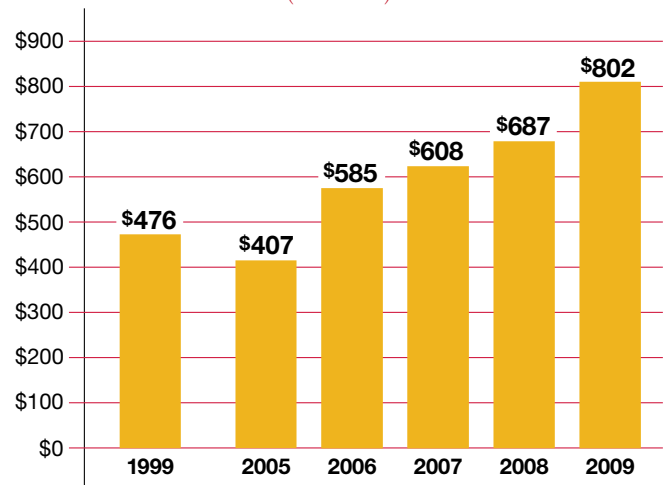


Comprehensive Estimates

The insurance category reflects health and medical insurance only. As the graph below indicates, it has grown steadily since 2005, nearly doubling over that period.

### Insurance: Economic Impact

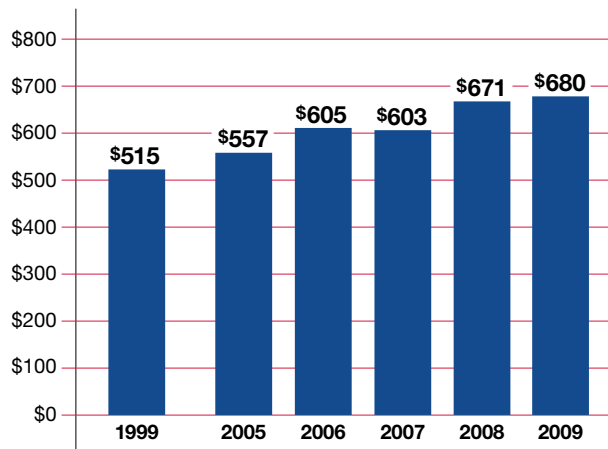
(Millions)



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Research makes an important contribution to the community and beyond, and the economic impact of the research sector held its ground over the past year. In the ten-year period, the economic contribution of research has increased 32%.

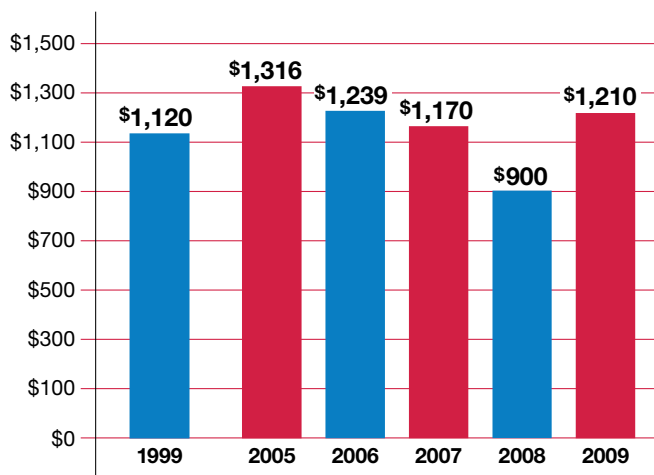
### Research: Economic Impact (Millions)



Traditional Method

The Pharmaceutical sector was a \$1.2 billion industry in 2009. This segment of the health care industry has declined slightly from a high of \$1.3 billion in 2005. Still, this sector employs 1,306 individuals who earn a healthy \$58,749 average wage.

### Pharmaceuticals: Economic Impact (Millions)



Comprehensive Estimates



### Growth In The Bioscience Industry

San Antonio landed one of the nation's largest economic development prizes of 2009 – Medtronic's new Diabetes Therapy Management & Education Center. This patient support, education and sales facility is a major expansion of Medtronic Diabetes, one of the Minneapolis-based medical technology giant's fastest-growing divisions. San Antonio operations began in September 2009.

San Antonio competed against every major urban area in the U.S. – more than 930 cities overall – to land the project, which is expected to provide at least 1,400 jobs over the next five years. When fully staffed, Medtronic's San Antonio center is expected to generate more than \$700 million per year in economic impact for the city and state, according to the San Antonio Economic Development Foundation.

Another recent coup for San Antonio's bioscience sector is the opening of InCube Labs, a local branch of a life science incubator based in the Silicon Valley of California. InCube expects to bring up to five biomedical startup companies and a locally-focused venture capital fund to San Antonio. The first three companies were announced in the fall of 2010.

These outside recruitments build on the strong foundation of health care and bioscience assets that San Antonio already has in place, including a growing number of emerging local companies that are working to bring new drugs, devices and diagnostics to market. Several of these companies have been awarded funding from the Texas Emerging Technology Fund to help propel their growth.

#### Research Mecca

*In 2009, San Antonio's major biomedical research institutions were awarded more than \$393 million in external research grants.*



## The Revolution In Military Medicine

The 2005 Base Realignment and Closure (BRAC) round is transforming San Antonio into a world-class center of medical treatment, education and training.

The functions of Brooke Army Medical Center (BAMC) and Wilford Hall Medical Center have been combined into the San Antonio Military Medical Center (SAMMC). As SAMMC-North, BAMC will continue to provide inpatient care as well as Level 1 trauma and emergency medical care. The only American Burn Association-verified Burn Center within the Department of Defense remains on this campus.

The Air Force's Wilford Hall Medical Center will be realigned as a large outpatient clinic designed to meet the medical needs of Lackland Air Force Base and the surrounding eligible population. The facility will be known as SAMMC-South. It will provide primary care as well as a full range of specialty clinics, ambulatory surgery, diagnostic imaging, and laboratory and pharmacy services.

Fort Sam Houston will be home to the Medical Education and Training Campus (METC). When fully operational, METC will be the largest military medical education and training campus in the world, providing all Army, Navy and Air Force basic and specialty medical training for enlisted personnel. More than 30 academic programs will produce an estimated 24,000 graduates each year.

These realignments will have a tremendous economic impact on the San Antonio region. The BRAC-related construction activity is creating more than 6 million square feet of space, the equivalent of 30 Wal-Mart Supercenters. Fort Sam Houston alone will gain approximately 12,500 new jobs and nearly 10,000 new family members. A report by the Military Transformation Task Force, a joint initiative of The Greater San Antonio Chamber of Commerce, the city of San Antonio and Bexar County, estimates the potential economic impact of the expanded military base operations at nearly \$8.3 billion.

## NAICS Codes (And Other Sources) For The Health Care And Bioscience Industry

### HEALTH SERVICES

#### Physicians

62111 Offices of physicians

#### Other Health Care Providers

62121 Office of dentists  
62131 Offices of chiropractors  
62132 Offices of optometrists  
62133 Offices of mental health practitioners  
62134 Offices of specialty therapists  
62139 Offices of all other health practitioners

#### Nursing Homes/Home Health

62311 Nursing care facilities  
62161 Home health care services

#### Hospitals

62211 General medical and surgical hospitals  
62221 Psychiatric and substance abuse hospitals  
62231 Other hospitals  
MTF U. S. Department of Defense inpatient Medical Treatment Facilities – uniformed military (civilian employees included in 62211)

#### Labs

62151 Medical and diagnostic laboratories

#### Other Direct Services

62191 Ambulance services  
62199 All other ambulatory health care services  
MTF U. S. Department of Defense outpatient Medical Treatment Facilities – uniformed military (civilian employees included in 62199)

### RELATED INDUSTRIES

#### Research & Education

54171 Physical, engineering and biological research  
UTHSCSA University of Texas Health Science Center at San Antonio  
AMEDDC&S Military medical education and training facilities  
ISR Department of Defense's Institute for Surgical Research

#### Social Services

62142 Outpatient mental health and substance abuse centers  
62149 Other outpatient care centers  
62321 Residential mental retardation facilities  
62322 Residential mental health and substance abuse facilities  
6233 Community care facilities for the elderly  
62399 Other residential care facilities  
62412 Services for the elderly and disabled  
62431 Vocational rehabilitation services

#### Pharmaceuticals

32541 Pharmaceutical and medicine manufacturing  
42421 Druggists' goods merchant wholesalers

#### Equipment Manufacturing and Wholesaling

33911 Medical equipment and supplies manufacturing  
42345 Medical equipment merchant wholesalers  
42346 Ophthalmic goods merchant wholesalers

#### Insurance

524114 Direct health and medical insurance carriers

#### Miscellaneous

44611 Pharmacies and drug stores  
44613 Optical goods stores  
44619 Other health and personal care stores  
92313 Administration of public health programs

# Technical Notes

In 1996, the Greater San Antonio Chamber of Commerce conducted its first Medical Economic Impact Study. This effort was sponsored by the Major Industry Council's Medical Committee, whose overall charge was to maintain, expand, and promote San Antonio as a world-class center of excellence in medical care and the biosciences. It was widely acknowledged that the Health Care and Bioscience sector's contribution to the local economy was substantial, but there had never before been an attempt to quantify that impact.

The Committee subsequently decided to compile this information on an annual basis, a practice that has been followed since with the sole exception of 2008. The present report is thirteenth iteration of the study.

The Medical Committee and its current successor, the Greater Chamber's Health Care and Bioscience Committee, have employed an inclusive definition of the Health Care and Bioscience industry. It includes not only hospitals and direct health care providers (physicians, dentists, optometrists and others), but also medical and biological research centers, producers of pharmaceuticals and other health care-related products, health insurance companies and (in the comprehensive version first offered in this study) medical education. Publicly funded providers of primary health care and health-related social services are also included, as are military and veterans' health care. The definition of "health care" includes both preventive care and the traditional medical services.

## Information Sources

The information for "traditional" estimates presented here is derived from the Texas Workforce Commission's Covered Employment and Wages database. This data (total employment and wages) is assembled from unemployment insurance reports to the state. The data is aggregated by the TWC into the lines of business defined by the North American Industrial Classification System (NAICS) coding framework. It represents essentially a 100% sample of all the businesses with employees in each NAICS subcode.

The specific subcodes included in this study are listed on page 21. They cover both the health care and related industry segments in great detail.

Since the TWC is constantly revising its historical data in the interest of greater accuracy, the data for 2007 and earlier years used in this study reflect many small changes from the data upon which previous Economic Impact Studies were based. The figures in this report are based upon the latest release of the TWC data, so they represent the most accurate measure now available of the industry and its subsectors in those earlier years.

Selecting which NAICS codes to include is not a simple task. Often it is obvious that all (or virtually all) of the businesses classified in a given NAICS category are part of the Health Care and Bioscience industry (for example, NAICS category 32541, pharmaceutical and medicine manufacturing). In other sectors, however, health-related products and services make up only a fraction of the activity included in that code. For example, category 44611 (Pharmacies and drug stores) describes a group of businesses that are an integral part of the health care delivery system but which also sell items, like greeting cards, that really do not belong in this sector.

It is therefore a matter of judgment to determine which industries to include and which to exclude. The rule the Committee followed was to include any 5- or 6-digit (the narrowest definitions) industry that in San Antonio seems to include a high proportion of medical- or bioscience-related businesses and to exclude other categories for which only a small proportion of the included business activity is medically related. Thus, industry 54171 (Physical, engineering and biological research) was included even though many of the kinds of research described in the NAICS code book are not health-related, because the Committee believes that in this

city the largest share of such research is medical or biological in nature. Similarly, the Committee excluded code 6113 (colleges, universities and professional schools), even though it includes the UT Health Science Center and many other educational and research activities relevant to Health Care and Bioscience, because these programs constitute only a small portion of higher education in San Antonio. The inclusion of the UTHSCSA in the comprehensive estimates, using data from a different source, is an attempt to address this limitation. By following this rule, the overall estimates of employment, payroll and economic impact should be approximately correct even though some relevant activity has been left out and some irrelevant activity included. Studies using the TWC database will always be constrained to this sort of compromise. However, the database's advantages of near-100% coverage of employers, consistent collection procedures and ready availability are considerable.

The information necessary for the inclusion of the UTHSCSA and the uniformed military presence in San Antonio's medical industry was derived from data supplied by these two entities from their own financial reports. Since these data are compiled for a different purpose than that reported to the TWC, using different procedures, the additional contributions attributed to these activities must be understood as approximations. Still, their impact is so great that it would be a significant understatement to exclude them.

## Methodology

The TWC provides employment and salary information for each quarter of the calendar year. The employment figures for the four quarters in each year were averaged to obtain a representative employment level, and payroll figures were computed by summing the wages reported for each of the four quarters. Average salaries were calculated by dividing the total payroll by the number of employees.

Translating payroll information into economic impact involves the application of a conversion factor. Sales or revenue for each NAICS industry is calculated from the TWC's payroll figures using the ratio of sales to payroll for the corresponding industry in the San Antonio MSA as reported in the most relevant economic census. Thus, conversion factors based on the 2002 Economic Census (detailed data from the 2007 Economic Census had not yet been released at the time this study was conducted) were applied to data from years 2005 to 2009; conversion factors based on the 1997 Economic Census were applied to the 1999 data. These figures are specific to each NAICS code, and ranged (in 2002) from a low of 1.79 for research to a high of 28.83 for Druggists' goods merchant wholesalers. This conversion factor simply translates payroll information into the amount of economic activity or impact generated for each specific industry.

This conversion factor is not the multiplier often employed in economic impact studies to calculate the total impact of an industry's export sales on the local economy. Multiplier effects represent the added impact on a region's economy from sales to customers outside that region. When such sales take place, new money is injected into the local economy, which in turn is spent (in part) on local goods and services. This additional spending generates economic activity that would not have taken place if all sales had been internal. None of the past Health Care and Bioscience studies have included multiplier effects, but this year the committee decided to include them in the comprehensive estimates. The committee members consulted experts in the many subsectors of the industry to determine plausible export percentages for each. Since multiplier effects are generated only by export sales, a credible estimate of export percentages is essential to the inclusion of those effects. The dollar value of the multiplier effects is calculated by applying multipliers from the U. S. Department of Commerce's RIMS II model to the estimated export sales.