

Market Assessment and Demand  
Projections for Hospital Inpatient and  
Ambulatory Services for the San Antonio  
Pediatric Market

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Final Report

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## Overview

Central to conducting an assessment of the feasibility of a free-standing children's hospital for the San Antonio market is understanding four key components:

1. Forecasted demographic changes in the pediatric population;
2. Knowledge of current and projected hospital utilization patterns by this population;
3. Awareness of the hospital resources dedicated to the care of children available today; and
4. Understanding of the changing pediatric work force and increased specialization and scarcity of subspecialty physicians.

This report addresses the question of need and demand for a free-standing children's hospital for the San Antonio and Bexar County pediatric market. The purpose of this study is to provide an overview of all the factors that will impact future demand for pediatric services, to forecast what that demand will be, and to project the range of total hospital beds and key hospital resources that will be needed to meet this demand.

For the assessment, the national and regional context of children's services was developed as the background to the current discussion. The San Antonio Market Area was defined to provide a common understanding of the geographic reach, population size and use patterns of patients who could potentially be patients of a children's hospital.

The current set of pediatric providers in San Antonio was profiled from the perspective of their market position in caring for both high acuity and large numbers of children, as well as the currently available depth and breadth of pediatric-dedicated services.

Based on this total market demand forecast, the critical service elements within any children's hospital – beds (by type: NICU, PICU and General Pediatrics), emergency services visits and treatment bays, and surgical cases by inpatient and outpatient cases and operating rooms was forecasted.

## ***Socio-Demographic Indicators***

- *Today, over 24 percent of Bexar County children live in poverty, and the median family income (2007) is \$44,587. According to Kids Count, 21 percent of Bexar County children receive Social Security Insurance (SSI), 64 percent qualify for discounted or free school lunches, 41 percent receive Women's, Infant, and Children's (WIC) supplements, and 27 percent of their families received food stamps.*
- *Texas continues to have the highest rate of uninsured residents in the nation at 23 percent, compared with 16 percent nationwide.*
- *In Bexar County the rate of the uninsured averages 25 percent. Children account for 24 percent of the uninsured in Bexar County, one of the highest percentages in Texas. Thirty one percent of Bexar County children are enrolled in Medicaid and 7 percent in the Children's Health Insurance Program (CHIP).*
- *In 2007, there were 27,127 births in Bexar County; 50% were funded by Medicaid.*
- *Of Bexar County's 422,655 children (26 percent of the total 1.6 million population), two thirds are age 11 or younger.*

*Source: UHS Planning Department Analysis.*

## **Discussion of Findings**

The current and future size of the San Antonio market for pediatric care is sufficiently large to support consideration of a free-standing children's hospital.

- There are approximately 566,000 children in the market today with more than 23,500 admissions for inpatient care.
- Between 2008 and 2020, the population of children will grow by 13% and reach approximately 640,000 children, with 28,000 forecasted inpatient admissions in 2020.

## Children’s Care Needs and Facilities Summary

Table 1: Summary of Current and Projected San Antonio Market Demand and Capacity.

	2008	2020
Pediatric Population	566,000	640,800
Pediatric and PICU Inpatient Admissions	12,600	15,600
General Pediatrics and PICU Current Beds <i>(At four main pediatric providers in San Antonio)</i>	334	N / A
General Pediatrics and PICU Total Bed Need	181	206
NICU Inpatient Admissions	10,900	12,400
NICU Current Beds <i>At four main pediatric providers in San Antonio</i> <i>At community hospital NICU’s</i>	303 + ? 203 100	N / A
NICU Total Bed Need <i>At four main pediatric providers in San Antonio</i> <i>At community hospital NICU’s</i>	357 232 125	414 269 145
Pediatric Emergency Visits	141,000	158,000
Pediatric Trauma and Burn Visits (Trauma Region P)	1,500	N / A
Pediatric Inpatient Surgical Procedures	3,200	3,900

Source: Claritas, 2009; Texas State Demographics Data Center, Office of State Demographer; THCIC Inpatient Data Set, 2008, Trauma Region P Trauma Registry Data provided by UHS.

Note: Current General Pediatrics, PICU and NICU bed counts include beds at Baptist Regional Children’s Center at North Central Baptist Hospital, CHRISTUS Santa Rosa Children’s Hospital, Methodist Children’s Hospital of South Texas, and University Health System.

NICU beds at community hospitals includes 100 beds identified; excludes 9 beds at Methodist Stone Oak as no patient care was provided in 2008. Excludes Wilford Hall Medical Center 24-beds as admissions are not reported to the State and are not reflected in the NICU Total Bed Need. Either additional NICU beds are located in the market and have not been identified on State Bed Licensure reports or units are operating at an occupancy rate above planning standards (i.e. current NICU average occupancy is approximately 82% vs. a Bed Need occupancy standard of 75%).

Trauma and Burn visits for other Trauma Regions are not available to UHS.

### Neonatal Intensive Care (NICU)

Today, the majority of admissions are for infants.

- 60% of the care is provided in the neonatal intensive care unit (NICU) setting
- In 2020, this is forecasted to result in an average daily census (ADC) of 290 across all providers in the market and require 414 total beds across all provider sites.
- The current market provision of NICU service is a distributed model with 12 San Antonio hospitals providing NICU care; some level of NICU service is available at most hospitals that have significant obstetrical services.
- It is anticipated that even with a free-standing children’s hospital in the market, approximately 35% of NICU care will continue to be provided for lower acuity infants by general community

hospitals; the children's hospital will receive transfers in order to provide infants with the specialty and sub-specialty services not available in other hospitals.

- Projections indicate the future NICU bed need at the four main pediatric providers will be 269 beds; these hospitals currently have 203 NICU beds. There will be a need for 66 additional NICU beds at high-acuity children's providers by 2020.

## Pediatric General Acute Care and Pediatric Intensive Care (PICU)

For older children, care is provided in the pediatric general acute care units and PICU units.

- Today an average of 136 children are hospitalized each day
- By 2020, this will grow to an average of 166 ADC requiring a total of 162 general pediatric beds and 43 PICU beds.
- Currently, there are 334 general pediatric and PICU beds among the four main pediatric providers; this level is in excess of the 206 beds needed in 2020.
- Pediatric and PICU care is more concentrated than for NICU care – there are four major providers for pediatric care in San Antonio; however, the market size does not support each of these hospitals having a full array of specialty programs and dedicated pediatric infrastructure to support the care of children.
- For many services, there is significant redundancy and duplication of care across the four hospitals.
- For many subspecialties, physicians are caring for patients in more than one hospital.
- Without sufficient critical mass, each provider is challenged to maintain the necessary hospital-based pediatric resources (e.g., pediatric radiology, anesthesiology, pathology, pharmacy, etc.) and subspecialty physicians.

## Pediatric Emergency Services

- Emergency services for children currently include approximately 141,000 visits per year and are expected to increase to approximately 158,000 visits per year by 2020.
- Emergency visits are widely distributed with every emergency room providing some level of care; however, CHRISTUS Santa Rosa Children's Hospital and Methodist Children's Hospital of South Texas have published statistics of providing for 61,945 at CHRISTUS and 58,000 at Methodist– a full 85% of the market need.

## Pediatric Trauma and Burn Services

- Pediatric Trauma and Burn cases, approximately 1,500 visits per year in Trauma Region P, are handled at University Health System (Trauma Level I) and Methodist Children's Hospital of South Texas (Trauma Level III).
- 90% of Pediatric Trauma and Burn cases in Trauma Region P receive care at UHS; preliminary assessment indicates less than 8% of all cases require care from outside the San Antonio Region – approximately 100 cases each year.
- Trauma and Burn cases from other regions are very small – total Trauma and Burn cases in Regions S and T are each approximately one-tenth the size of Trauma Region P in total cases.

## Pediatric Surgical Services

- Inpatient surgical services for children are typically highly concentrated at children's hospitals while ambulatory surgery is widely distributed due to the large number of low acuity ambulatory procedures.
- Evaluation of the surgical cases relevant to evaluating a free-standing children's hospital was focused on inpatient surgeries and the proportion of ambulatory surgery provided within the children's hospital setting.
- Today, there are approximately 7,600 total surgeries appropriate for a children's hospital; this number will increase to 9,400 by 2020 and require a total of 12-16 operating rooms within the San Antonio market to provide for children's inpatient and select ambulatory surgical care.

### ***UHS Planning Perspectives: Current State of Pediatric Inpatient Care***

*The pediatric population of Bexar County and the surrounding eight-county metropolitan area is large enough today, with future growth projected, to support a free-standing children's hospital. An assessment of the current market suggests the following:*

- *Currently the number of pediatric beds among the San Antonio inpatient pediatric providers, including Baptist, CHRISTUS, Methodist and the University Health System is 334 beds.*
- *Projected bed need in 2020 is 206 beds. Generally, most analysts consider that a minimum of 100 beds (50 neonatal intensive care and 50 pediatric intensive care unit beds and general medical/surgical beds) are needed to sustain a free-standing children's hospital.*
- *While all pediatric surgical and medical specialties are represented in San Antonio, the medical care delivery could be characterized as disjointed. Each of the four major health care systems offer an array of neonatal, medical/surgical, and pediatric intensive care service that are well defined within an individual hospital or health system, but are not coordinated or continuous across systems.*
- *Only within a few critical, quaternary specialties -most importantly cardiovascular surgery, bone marrow and solid organ transplants, and trauma and burn care - are there concentrated programs, but again operating out of different systems.*

*As a result, inpatient services are not consistently provided across providers. This decentralized delivery results in duplication and competition for scarce pediatric specialists.*

*Moreover, this distributed rather than concentrated approach to care delivery means insufficient volumes at any one hospital to support a full array of pediatric dedicated, hospital based physicians such as anesthesiology, general surgery, pharmacy, emergency medicine, pathology and radiology. Each pediatric provider competes for a limited pool of experienced nursing, respiratory, perfusionists and child life experts.*

*Over time, gaps in highly trained professionals could result in an overall erosion of the quality of care. Also, the increasing concentration of neonatal, pediatric anesthesiology, and general surgery into one or limited number of physician group practices can lead to price escalation.*

*Source: UHS Planning Department Analysis.*

### ***Considerations for a Free-Standing Children's Hospital***

The current and future population of children is large to support a free-standing children's hospital; however, the current pediatric providers have large, established programs that are effectively meeting the needs of San Antonio's children.

- Less than 2% of children leave San Antonio to seek care in Houston, Austin or elsewhere.
- NICU units are provided at 12 hospitals today due to the desire of community hospitals to provide comprehensive mother/baby services and support obstetrical programs. Currently, babies born who require specialty pediatric care are transferred to one of the four San Antonio hospitals with sophisticated (Level III) NICU capability.
- The need for general pediatric and PICU beds is being met by the current main pediatric providers; if a free-standing hospital is to be considered, it must include the patients currently cared for in the existing pediatric and PICU units as there is not sufficient unmet need or out-migration to warrant additional inpatient beds.

Creation of a free-standing hospital will offer the unmatched advantage of centralizing the patient volumes to garner scale to support Board-certified pediatric subspecialty physicians and pediatric-dedicated hospital resources.

- To accomplish this requires the commitment of San Antonio's pediatric physicians to practice exclusively or at least in large part, at the children's hospital.
- Support and collaboration of the existing pediatric providers will be required to make a free-standing children's hospital a reality.

### ***UHS Planning Perspectives: Rationale for a Collaborative Approach to Planning***

*Today, there is little out migration of area pediatric patients out of Bexar County to other metropolitan areas for care. This current state will likely change if San Antonio's hospital systems and physician groups are unable to recruit or retain needed pediatric specialists.*

*Competition for these pediatric specialists is growing increasingly intense statewide. In addition to the well established free-standing children's hospitals in Houston, Dallas, Fort Worth, Corpus Christi and Lubbock regional markets, there are planned or recently opened free-standing regional free-standing children's hospitals in Austin (Dell Children's opened in 2007); El Paso (to be opened in 2012); and Temple (Scott and White, under discussion).*

*Pediatric specialists have a choice of where to practice. The practice setting of choice is a comprehensive pediatric-focused organization, whose mission is dedicated to child and family centered care, and is supportive of high quality pediatric research, educational and outreach programs. A philanthropic foundation with community-wide support is desired to sustain programs and services, now needed, but for which there is no or limited funding.*

*Source: UHS Planning Department Analysis.*



## Introduction

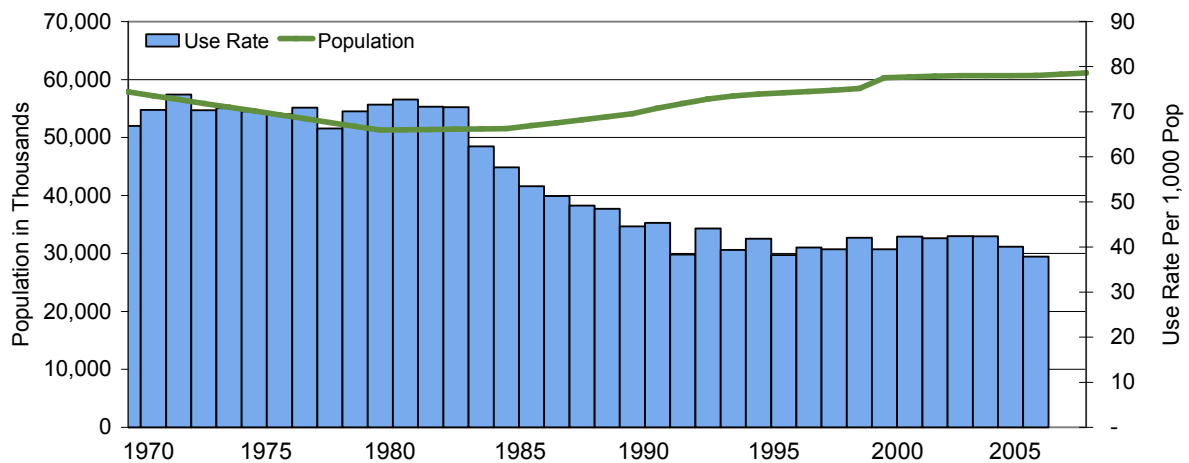
This section provides an overview of historical and current trends in utilization of inpatient hospital care by the 0-18 year old population, nationally, in order to establish a baseline for forecasting future demand for inpatient pediatric care in the San Antonio area. Also provided is an outline of the major national factors that could heighten or lessen the admission rate of children to the area hospitals.

## Background: Historical Demand for Pediatric Hospital Care

To understand the expansion in number and evolution of children's hospitals nationally, it is helpful to review the changes in the population of the pediatric age cohort and inpatient utilization pattern over the past four decades. This information must be reviewed with the caveat that national data includes only the age cohort of ages 0-15. Historically, before the expansion of the number of children's hospitals and pediatric subspecialists, older children received a large proportion of care in adult general acute care settings, being cared for by adult physicians. As specialized children's hospitals and pediatric specialty providers have developed, the age range of children typically considered in the "pediatric cohort" has been expanded to include children from birth to 17 years and 364 days of age (0-18). The inclusion of the adolescent population in the planning for children's hospital services was a result not only of the availability of dedicated resources, but the survival rate of children into their teens with life-long diseases and disorders.

The population of children today is relatively equivalent to the population in 1970, with the intervening timeframe experiencing a decline in the number of children in the country. In 1970, there were approximately 57.9 million children in the United States, who generated 3.9 million admissions to all hospitals -- a rate of 67 admissions per 1,000 children. By the 1980's, the population began to level off and admission rates were reduced as advances in care models, pharmacological interventions and technology that could support care in the ambulatory setting materially changed the need for inpatient hospitalization; inpatient utilization declined to 58 admissions per 1,000 children. Pediatric admission rates continued to decline in the 1990's to 40 admissions per 1,000 children, due largely to continued clinical practice transition from the inpatient to ambulatory setting. This transition was enabled by innovations in medicine and pharmacology that allowed the sickest and most fragile children to be kept alive, often with community-based social support for chronic conditions. During the same period, however, the population began increasing and thus, growth in the number of children began to offset the decline in the admission rate. By the early 2000's, the population of children surpassed the population in 1970, while the total hospitalizations remained below historical levels; the 2006 national admission rate is 38 per 1,000 children.

Figure 1. US Historical Population and Inpatient Use-Rates per 1,000 Children under Age 15, 1970-2006.



Source: Population Division, U.S. Census Bureau. National Hospital Discharge Survey, Centers for Disease Control and Prevention. Note: 1987 Use-rate estimated based on 1986 and 1988 data. Use-rate data is not available for 2007 or 2008.

## Specialization and Centralization of Pediatric Care

Concurrent with the population and use-rate changes over the past four decades, the body of knowledge and resources to care for children has increasingly become specialized; prior to the 1970s, the majority of pediatric care was delivered by general pediatricians, and by adult specialists in their respective areas. The pediatric specialty focus and designations have expanded since the 1970's; today the American Board of Medical Specialties recognizes 29 pediatric specialties and subspecialties. These highly specialized physicians typically dedicated to both the practice of pediatric care, as well as the research and teaching activities that advance their specialties, increasingly focus their work at children's hospitals. Per the National Association of Children's Hospitals and Related Institutions, independent children's hospitals train almost 35% of all pediatricians and nearly 50% of all pediatric specialists.

The result of the 25% reduction in pediatric hospitalization demand from 1970 to 1985 has had long-term effects on community hospitals that operate pediatric units. General acute care hospitals, endeavoring to maintain a "full service" hospital and care for all members of the community, have maintained pediatrics units through periods of declining volumes over the past three decades. Since the 2000's, there has been a general recognition that pediatric volume is insufficient to support all the specialized staffing and resources that are necessary to maintain a quality pediatrics unit. General acute care hospitals began to seek one of two solutions to offset the volume decline: 1) reduce the pediatric services and close the dedicated units no longer supported by the smaller average daily census; or 2) develop pediatric specialty services and resources attracting a larger number of patients. Those hospitals that pursued option 2 successfully typically garnered increasing market shares. To be successful, the hospital attracted pediatric specialists to practice at the hospital. Over time, many of these hospitals developed the children's hospital-within-a-hospital concept or eventually separated pediatric services into a free-standing children's hospital. Today, there are more than 160 children's hospitals in the U.S. with varying degrees of affiliation to general acute care hospitals – some are completely free-standing (such as Texas Children's Hospital in Houston and Children's Medical Center in

Dallas) while others are contained within a hospital or system (such as CHRISTUS Santa Rosa Children’s Hospital and Methodist Children’s Hospital of South Texas).

## *National Children’s Hospitals and Local/Regional Children’s Hospitals*

There are two tiers of children’s hospitals across the country -- those with deep programmatic expertise, nationally-recognized physician leaders and scientists, national clinical programs, and externally funded pediatric medical research (e.g., National Institute of Health); and those with local service that primarily serve children who reside within the metropolitan market area.

- **National Children’s Hospitals (NCH):** These are typically institutions with deep historical roots, characterized by a strong affiliate relationship with a school of medicine to integrate research and teaching activities in the provision of pediatric clinical care. The majority of these children’s hospitals are situated in large, urban markets (e.g. Boston, Philadelphia, New York, Dallas, Houston, etc.) with a large enough population of children to support the sub-specialty programs’ scale requirements. These children’s hospitals are typically at the forefront of developing new technology and care protocols and attract patients from a large regional, if not national, market to seek the specialized care not available anywhere else.
- **Local Children’s Hospitals (LCH):** These hospitals are typically newer – having been developed over the past 30 years – and focus on pediatric clinical care delivery. While the large majority has a formal affiliation with the local school of medicine, the relationship does not include the high level of organizational integration seen at NCH’s (e.g. combined medical staff and school of medicine leadership). The hospital may support some level of research and teaching but these are secondary to the clinical mission. Many of these hospitals have developed a small set of leading clinical programs and draw patients from a local or regional geography.

## *The Future of Pediatric Care*

From a population and demography perspective, the future needs for pediatric care will increase as the population grows; the US will have 5.6 million more children by 2020. The Texas population includes a higher proportion of children than the national average. Within the San Antonio Market Area, the population of children is increasing and will include 55,000 more children during the next decade.

Table 2: Population of Children under 18, US, Texas and San Antonio, 2000-2020.

	2000	2005	2010	2015	2020
US Population (000s)	72,385	73,502	74,701	77,111	80,296
% of All Ages	25.7%	24.9%	24.2%	23.9%	23.9%
Texas (000s)	5,892	6,314	6,797	7,371	7,948
	28.3%	27.7%	27.6%	27.7%	27.8%
San Antonio Market Area (000s)	498	539	586	627	641
	27.5%	26.9%	26.5%	26.0%	25.1%

Source: Claritas, 2009; Texas State Demographics Data Center, Office of State Demographer; US Census, 2006.

Today, an increasing number of these children live with chronic childhood diseases and disorders. The 58% reduction in admission rates (from an average of 70 per 1,000 during the five-year period 1970-1974) to an average of 41 per 1,000 during the most recent past five years (2002-2006) is unlikely to continue to decline at such precipitous rates given that the population of children admitted today

represent more medically complex cases not easily treated in an ambulatory environment. Children's hospitals are becoming the predominant source for pediatric inpatient care for these children; today over 90% of heart or lung transplants, cardiac surgery and malignant neoplasm treatment and 40% of all pediatric inpatient days are provided in a children's hospital<sup>1</sup>.

As part of the overall national health care reform conversation, many options are being considered that may affect the way pediatric care is provided in the future. Initial policy recommendations suggest that with emphasis and incentives for providing primary care and creating medical homes for all, major increases in pediatric care will occur in the ambulatory care delivery system and there will be reductions in inappropriate use of emergency rooms.

The FDA Modernization Act (1997) spurred an increased focus on pharmaco-genetics for the pediatric population, dramatically increasing the number of clinical trials and revolutionizing how care is delivered for diabetes, childhood cancers, and developmental disorders (e.g. autism). Advances in genetics research will increase the identification of and treatments for children with chronic conditions, requiring lifetime care. The goal of these advances in vaccines and other therapeutic modalities is to further reduce the pediatric care, both in the hospital and ambulatory settings.

Today as well into the foreseeable future, the national supply of general pediatric physicians is approximately 53 physicians per 100,000 population and generally in balance with the needs of the population<sup>2</sup>, however, within individual sub-specialties there may be acute shortages and maldistribution centered in larger cities and medical schools. Pediatric specialty physicians are selective about their choice of practice location; increasingly these physicians seek the dedication and specialty children's resources embodied within a dedicated, free-standing children's hospital and affiliated medical school to continue their clinical, research and teaching activities.

Perhaps the most impactful area of expected future changes will be in the area of financing. Many children's hospitals nationwide have developed sustainable models built on a mix of revenues from Medicaid and the State Children's Health Insurance Program (SCHIP), insured patient revenues, Disproportionate Share (DSH) payments and philanthropic support. Virtually every one of these funding sources is under immense pressure to reduce costs in today's national health care reform discussion.

- **Medicaid:** Reimbursement has significantly declined in many states with a large number now reimbursing at rates below the cost of care. National reform plans all call for changes to the funding formulas and coverage eligibility to rebalance, and presumably reduce, the overall cost of these programs.
- **State Children's Health Insurance Program (SCHIP):** Created in 1997 and with wide enrollment by 2000, SCHIP was the single largest State/Federal policy initiative resulting in expansion of health coverage to children. It increased the number of low-income children covered through the program by six million children in 2000. In early 2009, SCHIP was renewed and expanded to include eligibility for another four million children, for a total of 11 million children covered today.
- **Commercial/Private Insurance:** The current recession has materially reduced the number of children covered by private insurance due to parent's loss of employment or employer coverage cancellations. Even if unemployment levels stabilize, many employers have discontinued or

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<sup>1</sup> All Children Need Children's Hospitals, National Association of Children's Hospitals and Related Institutions, 2009.

<sup>2</sup> Pediatrician Workforce Statement, American Academy of Pediatrics, May 30, 2006.

reduced coverage, having in effect transferred the burden of cost to the government (as eligible enrollees for government-sponsored insurance) or to hospitals as uninsured patients.

- **Disproportionate Share (DSH):** Originally developed to support the safety net hospitals, DSH frequently is a considerable funding source for children's hospitals, as many of their patients are covered by Medicaid or uninsured. As the national health care debate seeks to expand coverage, many in public policy discussions look to reducing the DSH funding as a source of revenue to be transferred to finance coverage expansion. The National Association of Children's Hospitals and Related Institutions (NACHRI) and the National Association of Public Hospitals & Health Systems (NAPH) have jointly issued a policy statement outlining the importance of continued DSH funding under an expanded coverage model due to under-reimbursement and remaining uninsured populations.
- **Philanthropic Support:** Children's hospitals typically rely upon philanthropy and income from investments and endowment not only to execute their capital plans, but for up to 25% of operating support each year. The current recession has resulted in declines in donor support; while this may improve over time, it is unlikely to return to historic levels in the next few years. Endowment portfolios have been severely reduced. Additionally, health care financing discussions have included options that would remove the tax-exempt status from hospitals, thus eliminating the tax deduction to donors. If this were enacted, the impact on donations to children's hospitals would be ruinous.

## Factors Influencing Demand for Inpatient Care

Over the coming decade, a range of factors are anticipated to influence the need and use of pediatric inpatient care services. Some factors are well-defined and foreseeable while others are less certain as to timing and magnitude of the impacts.

*[Table on following page]*

Table 3: Inpatient Demand Future Factors and Relative Timing.

Relative Timing	Factors Increasing Inpatient Demand	Factors With Uncertain Impacts	Factors Decreasing Inpatient Demand
Short-Term (Within 3 Years)	<ul style="list-style-type: none"> <li>2009 federal reauthorization of SCHIP expanded coverage for 4 million children nationally who are currently ineligible</li> <li>Increase in low birth weight infants as a proportion of total births</li> </ul>	<ul style="list-style-type: none"> <li>Telemedicine consults may improve pediatric specialty care access closer to home; effect on total inpatient use in the broader region may not change, but number of children transferred to the “children’s hospitals” may be reduced</li> </ul>	<ul style="list-style-type: none"> <li>Expanded coverage increases access to primary and preventative care</li> <li>Expanded infusion treatment protocols delivered in ambulatory environment</li> <li>Declining birth rate reduces population of children</li> </ul>
Mid-Term (3-6 Years)	<ul style="list-style-type: none"> <li>Increase in fetal surgical intervention results in admission for pregnant mother in select children’s hospitals that perform these procedures; may increase viability and result in infant admission</li> </ul>	<ul style="list-style-type: none"> <li>Creation of medical home for children with chronic needs</li> <li>Telemonitoring and expanded home health may reduce need for inpatient stay...or, it may result in diagnosis of more diseases and increased procedures and interventions</li> </ul>	<ul style="list-style-type: none"> <li>National health reform and increasing application of utilization management and standard admission criteria</li> </ul>
Long-Term (7+ Years)		<ul style="list-style-type: none"> <li>Major pharmacological new products</li> </ul>	
Uncertain Timeframe	<ul style="list-style-type: none"> <li>Proposed Texas Medicaid and SCHIP eligibility expansion and adoption of a 12-month enrollment standard</li> <li>Aging of survivors of childhood disease/disorder require hospitalization throughout lifetime</li> </ul>	<ul style="list-style-type: none"> <li>National health care reform stimulates more regional planning and distribution of resources, resulting in consolidation of pediatric services within regions/markets; could result in fewer resources available to serve larger populations</li> <li>Expanded pediatric specialist access increases ambulatory care, decreasing inpatient needs; more diagnosis may increase inpatient demand</li> </ul>	

## Regional Trends

Within Texas, Medicaid has historically offered higher reimbursement rates to licensed children's hospital providers than to general acute care hospitals which have pediatric programs. This enhanced reimbursement created the financial platform for many communities (typically spearheaded by the area medical school) to develop separately licensed children's hospitals.

Demographic trends and pediatric health care utilization in the San Antonio region has largely followed the national and state trends. The population of children in the market is increasing and the local general acute hospitals – Baptist Health, CHRISTUS Santa Rosa Healthcare, and Methodist Healthcare System - have pursued specialized pediatric programs within the adult hospital facilities. CHRISTUS Santa Rosa Children's Hospital, previously a separately licensed children's hospital organization located within the CHRISTUS Santa Rosa Hospital, was reintegrated into the general acute care hospital in 2008 to increase funding to the broader organization. Today, no separately licensed children's hospital exists within San Antonio.

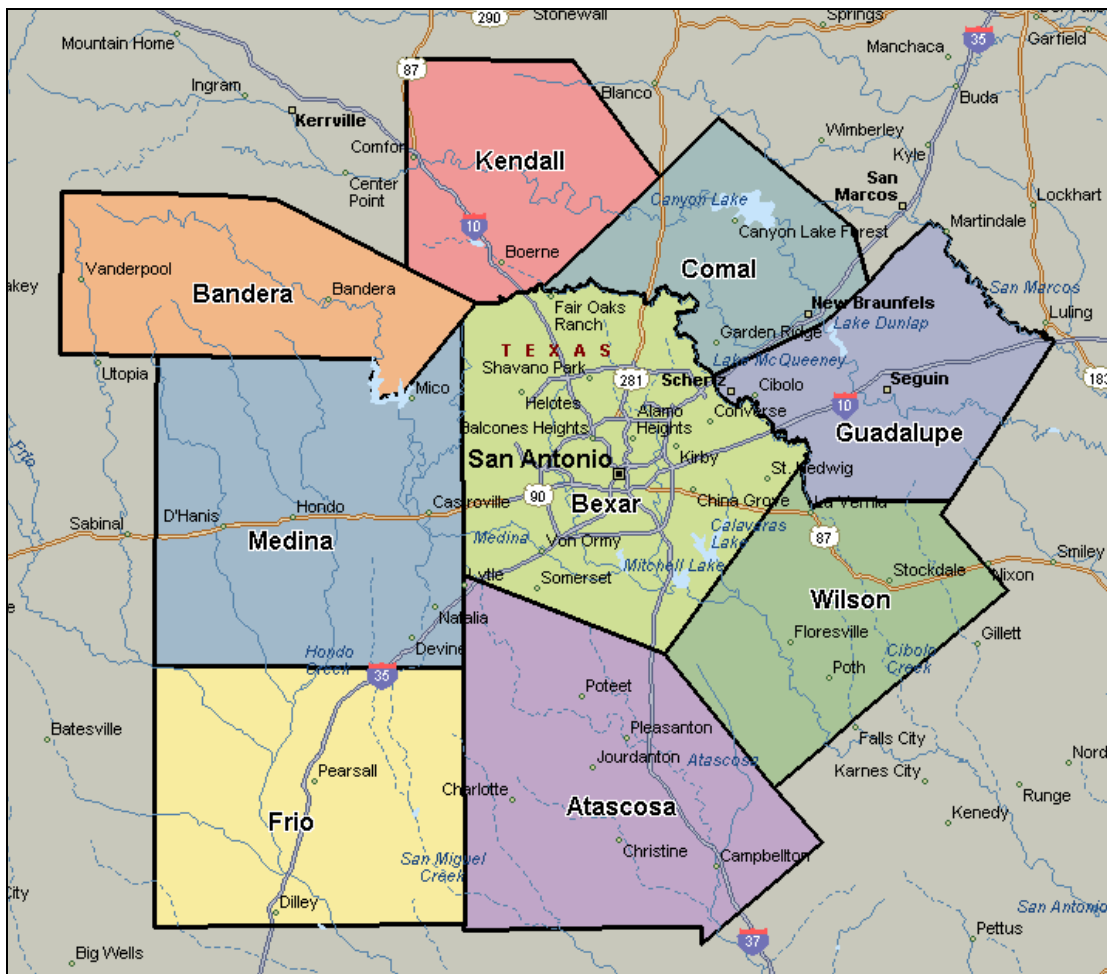
## Introduction

This section defines the San Antonio market geography, population and demography to set the basis for understanding the needs for pediatric health care services. To begin, the market was defined as the nine counties immediately proximal to San Antonio and the population includes all children under the age of 18. Historical and projected population is considered in age cohorts (i.e., 0-4 years, 5-9 years, 10-14 years, and 15-17 years).

## Market Definition

The San Antonio Market Area, for purposes of this study, was defined as the nine counties encompassing and surrounding San Antonio. Within this geography, Bexar County includes the largest population center and thus defined as the Primary Market Area (PMA). The remaining eight counties immediately adjacent to Bexar County – Atascosa, Bandera, Comal, Frio, Guadalupe, Kendall, Medina and Wilson – are considered together as the Secondary Market Area (SMA) and comprise a smaller population of children.

Figure 2: Counties in the San Antonio Market Area.

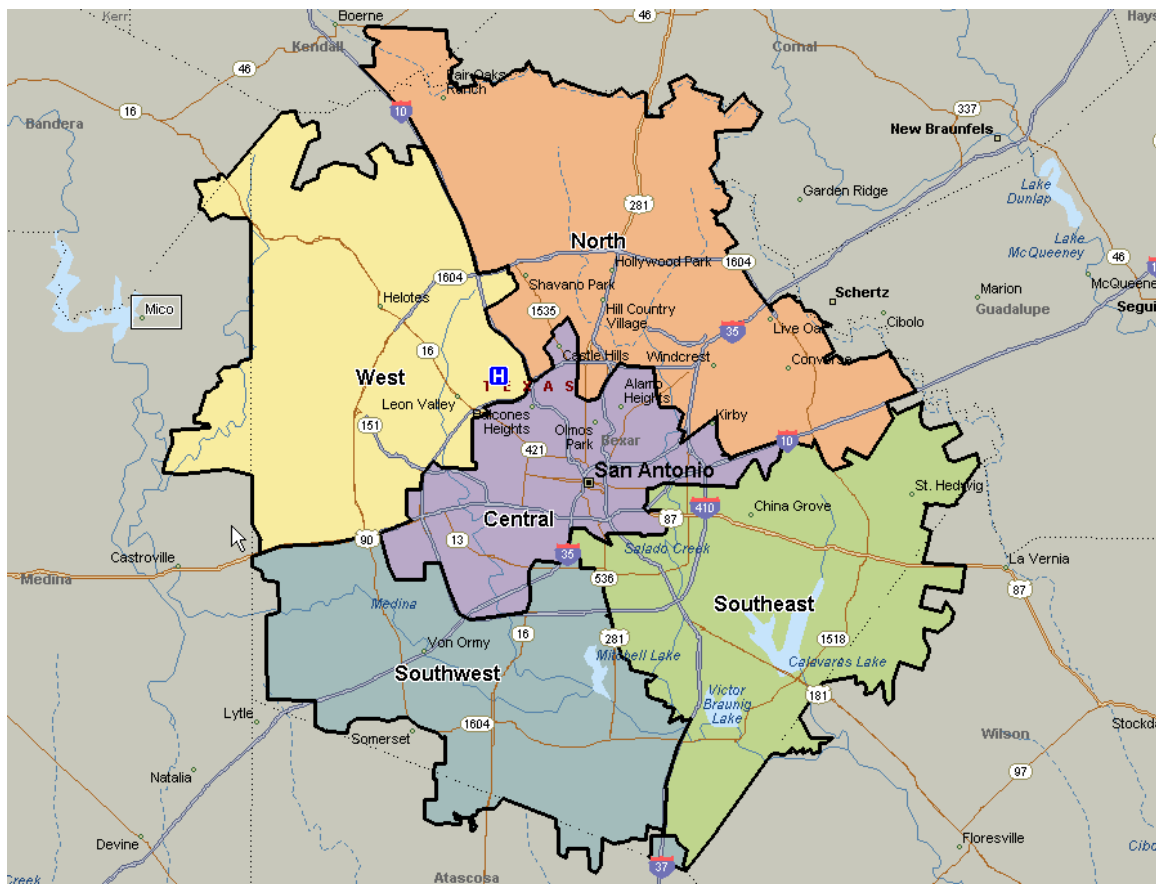




In order to detail further the population and pediatric market within Bexar County, five sub-markets were defined within the PMA. They are:

- **Central:** Includes of ZIP codes within Interstate 410
- **North:** Includes ZIP codes bounded by Interstate 10
- **Southeast:** Includes ZIP codes south of Interstate 10 and east of Interstate 37
- **Southwest:** Includes ZIP codes west of Interstate 37 and South of U.S. Route 90
- **West:** Includes ZIP codes north of U.S. Route 90 and west of Interstate 10

Figure 3: Primary Market Area Sub-Markets.



## Population Projections

Population and demography data for PMA and SMA was obtained from the Nielson Claritas population data service (Claritas). Claritas provides population figures from the 2000 Census, an estimate of the 2009 population and a projection of the 2014 population. For the projection period 2015-2020, the growth rate from the Texas State Data Center population projections was applied.

The total population of children in the San Antonio Market Area is projected to grow by 55,100 between 2010 and 2020 – an increase of 11%. The population in the PMA (Bexar County) is projected to increase

by the largest number – adding approximately 34,200 children over the next decade. Growth in the SMA is variable but collectively comprises less than 25% of the population of children.

Over the period since the 2000 and projected to 2020, the population is expected to increase by an average of 1.3% per year. Claritas and the Texas State Demographic projections both indicate that the first half of the period – through 2010 – will have a higher growth rate averaging 1.6% per year. By the end of the projection period, between 2015 and 2020, annual growth is projected to decline to a rate of 0.4% per year.

Table 4: San Antonio Market Area Population under Age 18 by County, 2000-2020.

	2000	2005	2010	2015	2020	CAGR
Atascosa	12,700	12,900	13,100	13,800	14,600	0.7%
Bandera	4,300	4,300	4,400	4,600	5,100	0.8%
Bexar	397,100	431,500	470,400	502,400	504,600	1.2%
Comal	23,300	27,500	32,500	37,700	41,700	3.0%
Frio	4,700	4,500	4,300	4,300	4,500	-0.2%
Guadalupe	25,300	25,900	26,500	27,500	28,800	0.6%
Kendall	10,500	11,500	12,700	14,400	16,400	2.3%
Medina	10,700	10,900	11,200	11,800	12,600	0.8%
Wilson	9,800	10,200	10,600	11,300	12,600	1.2%
<b>Total</b>	<b>498,300</b>	<b>539,200</b>	<b>585,700</b>	<b>627,800</b>	<b>640,800</b>	<b>1.3%</b>

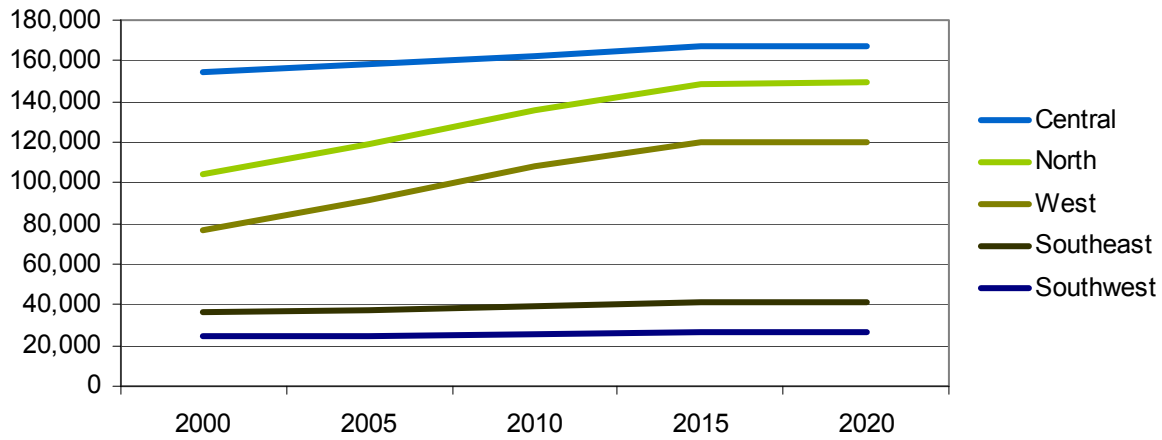
Source: Claritas, 2009 Texas State Demographics Data Center, Office of State Demographer

Note: CAGR is the Compound Annual Growth Rate

## Primary Market Area Population

Historically, the Central PMA, including the City of San Antonio, has been the largest center of children’s population. Over the next decade, high projected growth rates for the North and West PMA will result in a substantial increase in population. The West PMA population is projected to increase by 2.3% per year over the 20 year period – adding approximately 43,300 more children between 2000 and 2020. The North represents the second highest growth rate and will add approximately 44,400 children over the planning horizon. The three other PMA submarkets will have low growth rates and collectively add approximately 19,800 children between 2000 and 2020.

Figure 4: Primary Market Area Population under Age 18 by Sub-Market, 2000-2020.



Source: Claritas, 2009 Texas State Demographics Data Center, Office of State Demographer.

Table 5: Primary Market Area Population under Age 18 by Sub-Market, 2000-2020.

	2000	2005	2010	2015	2020	CAGR
Central	154,500	158,000	162,100	167,100	167,600	0.4%
North	104,700	119,500	135,700	148,200	149,100	1.8%
West	77,100	91,600	107,900	119,900	120,400	2.3%
Southeast	36,600	37,800	39,200	40,900	41,100	0.6%
Southwest	24,200	24,700	25,400	26,300	26,400	0.4%
<b>Total</b>	<b>397,100</b>	<b>431,500</b>	<b>470,400</b>	<b>502,400</b>	<b>504,600</b>	<b>1.2%</b>

Source: Claritas, 2009 Texas State Demographics Data Center, Office of State Demographer.

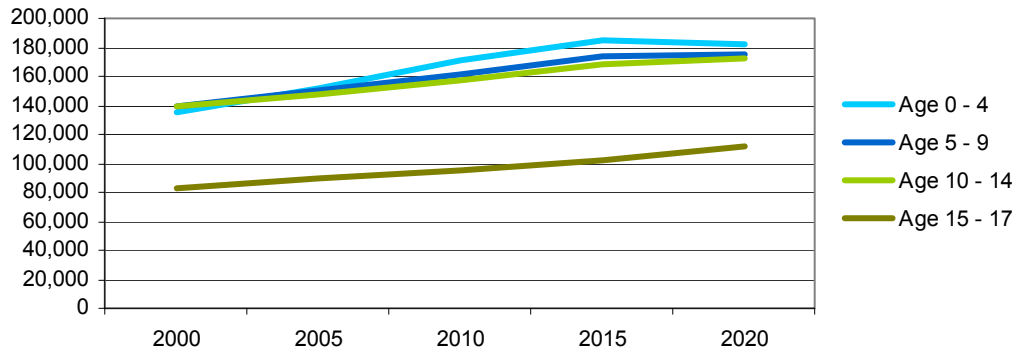
Note: CAGR is the Compound Annual Growth Rate

## Demography

The population under age 18 has been defined by four age cohorts: 0-4 years; 5-9 years; 10- 14 years; and 15-17 years. Growth in the population will occur mainly within the 0-4 and 15-17 age cohorts.

The population of children is projected to increase through 2015 and then stabilize. The reduction in the growth rate between 2015 and 2020 in the Age 0-4 cohort indicates a projected reduction in the birth rates. The older age cohorts will follow the trend in birth rates with some level of adjustment to account for migration in and out of the Market Area.

Figure 5: San Antonio Market Area Population under Age 18 by Age Cohort, 2000-2020.



Source: Claritas, 2009 Texas State Demographics Data Center, Office of State Demographer.

During 2010 to 2020, the increase in population will mainly be in children ages 10-17 with approximately 32,100 more children; for the population of children under age 10, the increase will be approximately 23,100 more children.

Table 6: San Antonio Market Area Population under Age 18 by Age Cohort, 2000-2020.

	2000	2005	2010	2015	2020	CAGR
Age 0 - 4	135,300	152,200	171,700	184,400	181,400	1.5%
Age 5 - 9	139,700	150,000	161,600	173,600	175,000	1.1%
Age 10 - 14	140,000	147,800	157,200	168,000	173,100	1.1%
Age 15 - 17	83,400	89,100	95,200	101,800	111,400	1.5%
<b>Total</b>	<b>498,300</b>	<b>539,200</b>	<b>585,700</b>	<b>627,800</b>	<b>640,800</b>	<b>1.3%</b>

Source: Claritas, 2009 Texas State Demographics Data Center, Office of State Demographer

Note: CAGR is the Compound Annual Growth Rate. Includes PMA and SMA.

The population aging is even more pronounced in the PMA than in the SMA. Between 2010 and 2020, the increase in population of children ages 10-17 is estimated at approximately 23,200 more children, while the increase for children under age 10 is less than half of the increase of the two cohorts, at approximately 10,800 more children.

Table 7: Primary Market Area Population under Age 18 by Age Cohort, 2000-2020.

	2000	2005	2010	2015	2020	CAGR
Age 0 - 4	110,100	124,600	140,200	149,300	144,600	1.4%
Age 5 - 9	111,900	120,500	130,600	139,400	137,000	1.0%
Age 10 - 14	109,700	116,700	125,100	133,800	134,900	1.0%
Age 15 - 17	65,400	69,700	74,600	79,900	88,000	1.5%
<b>Total</b>	<b>397,100</b>	<b>431,500</b>	<b>470,400</b>	<b>502,400</b>	<b>504,600</b>	<b>1.2%</b>

Source: Claritas, 2009 Texas State Demographics Data Center, Office of State Demographer.

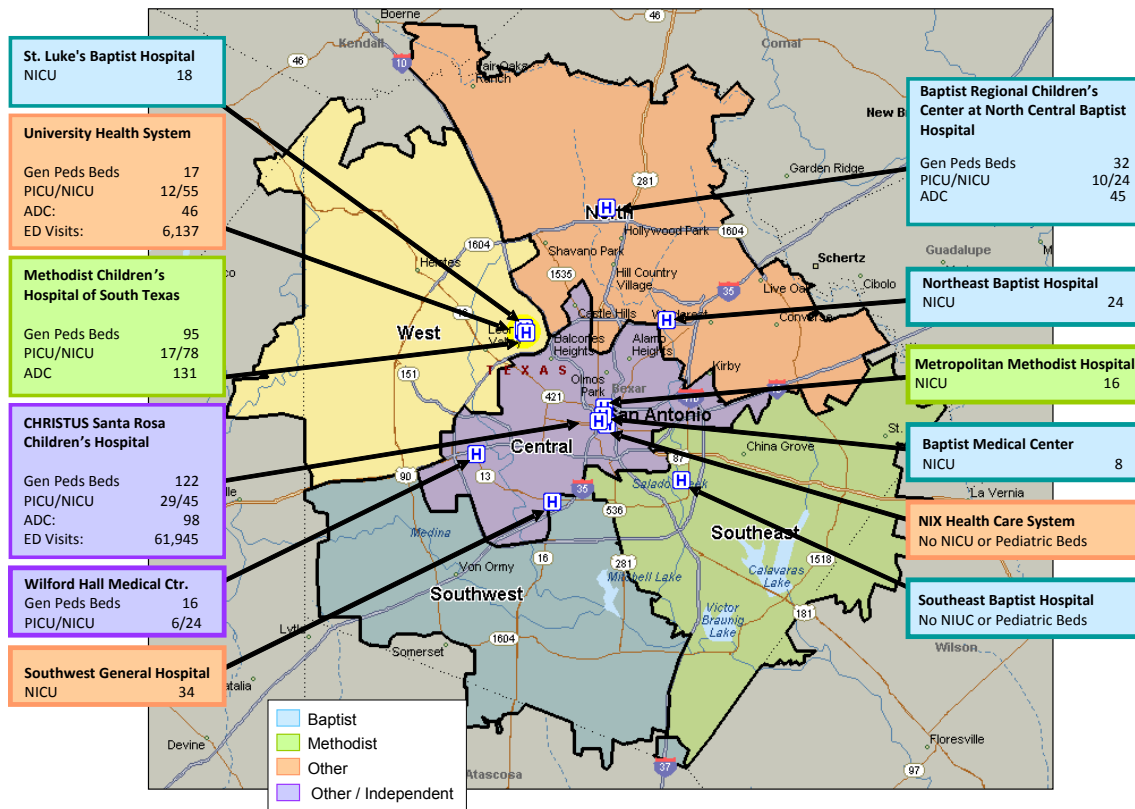
Note: CAGR is the Compound Annual Growth Rate

## Introduction

This section profiles the current pediatric hospital providers within the greater San Antonio Market Area. It reviews the resources available - inpatient units, emergency departments, surgical capacity – as well as profiles the medical staff specialties and clinical expertise available at each. We summarize the general capabilities of each pediatric provider. Lastly, we define the market position of the four main pediatric providers – Baptist Regional Children’s Hospital at North Central Baptist Hospital (Baptist), CHRISTUS Santa Rosa Children’s Hospital (CHRISTUS), Methodist Children’s Hospital of South Texas (Methodist), and University Health System (UHS) – for neonatology and pediatric services.

## Current San Antonio Market Pediatric Hospital Providers

Figure 6: Pediatric Hospital Providers.



Source: Texas Department of State Health Services, Hospital Beds Report 07/13/2009.

Within the San Antonio Market, children are currently served at four main hospitals: Baptist, CHRISTUS, Methodist, and UHS. Key statistics of neonatology and pediatric services are summarized in Table 8 below, as available from public sources.

Table 8: San Antonio Major Pediatric Providers, Summary of Key Facility and Volume Statistics.

Facilities and Dedicated Pediatric Resources						
	Baptist	CHRISTUS	Methodist	UHS	Total	
NICU Beds	24 beds; Level IIIb	45 beds Level III	78 beds Level III	32-bed Level III and 23-bed Level II	203	
PICU Beds	10	29	17	12	68	
Pediatric Beds	32	122	95	17	266	
Pediatric Dedicated Emergency Bays	18 bays including 2 Trauma	Not Available	26 bays including 2 Trauma and 5 fast track	No dedicated pediatric emergency bays	Not Available	
Pediatric Dedicated Operating Rooms	1	Not Available	7	No dedicated OR's	Not Available	
Patient Volumes						
	Baptist	CHRISTUS	Methodist	UHS	Other Hospitals	Total
Pediatric and Neonatal Admissions	2,979	5,281	7,055	1,740	6,531	23,586
NICU ADC	29	33	66	30	148	247
NICU Occupancy Rate	121% <sup>1</sup>	73%	85%	55%	Not Available	Not Available
Pediatric & PICU ADC	16	65	65	16	27	189
Pediatric Occupancy Rate	38%	43%	58%	55%	Not Available	Not Available
Pediatric Emergency Visits	Not Available	61,945	58,000	6,137	Not Available	141,000
Pediatric Inpatient Surgical Admissions	274	1,248	1,105	421	241	3,289

Source: Hospital websites; American Hospital Association, June 2009.

Note: NICU is Neonatal Intensive Care Unit; PICU is Pediatric Intensive Care Unit.

<sup>1</sup>Per Texas State admission data, the number of Neonatology patient days exceeds available bed days. Data for 2007 and 2008 vary significantly and may indicate an error in the 2008 data.

## Profile of Clinical Capabilities and Medical Staff Specialties

Among the pediatric hospital providers, all medical specialties are represented and children can receive the full spectrum of pediatric specialty care within the San Antonio community; further study of the pediatric physician community within San Antonio is needed to confirm pediatric-trained physicians are

providing care versus adult specialists. Within a few specialties – cardiovascular surgery, bone marrow transplant, trauma – a program is centralized at one hospital due to the small number of patients within the San Antonio Market Area. Hospital-based services are not consistently provided across all pediatric providers as the decentralized market volumes result in insufficient volumes at any one hospital to support the full array of pediatric-dedicated, hospital-based physicians such as anesthesiology, pharmacy, emergency medicine, pathology and radiology.

## ***Baptist Regional Children’s Center***

Pediatric services within the Baptist Health System are centralized at Baptist Regional Children’s Center at North Central Baptist Hospital (Baptist) with a 24-bed Level IIIb Neonatal Intensive Care Unit (NICU), a 10-bed Pediatric Intensive Care Unit (PICU) and 32-bed general pediatrics unit, serving approximately 3,000 inpatients per year. The Hospital has also developed a pediatric emergency room, transport service and outpatient testing and treatment center (PediQ). The pediatric services are organized within the structure of the North Central Baptist Hospital from both a governance and facility standpoint offering little management and governance autonomy to the service.

These services are combined with the women’s delivery services into a “moms and kids” approach to the market. These pediatric services are positioned as a local, convenient community hospital with higher care capabilities and more child-focused resources than other community hospitals. Baptist is advancing the care capabilities by employing pediatric intensivists, pediatric hospitalists, pediatric emergency medicine physicians and building a new pediatric operating room. It has started to develop outreach through a transport service.

The neonatology service at Baptist is a closed staff model with an exclusive contract with Pediatrix Medical Group (Pediatrix) for neonatology coverage. Pediatric care is mainly provided in general pediatrics with care provided by hospital-based physicians; a small number of pediatric subspecialists provide consultations and care at Baptist.

## ***CHRISTUS Santa Rosa Children’s Hospital***

CHRISTUS Santa Rosa Children’s Hospital (CHRISTUS) is the largest and most well-developed pediatric service in San Antonio. It has 196 beds, including 45 NICU beds and treats 5,300 children annually in the inpatient setting. Historically, CHRISTUS Santa Rosa Children’s Hospital was a separately licensed facility with an independent organizational structure. Due to payer advantages of combining the pediatric services with the adult general acute care hospital, the separate license was surrendered in 2008 and resulted in the CHRISTUS Santa Rosa Children’s Hospital discontinuing its separate Board of Directors and governance structure.

The neonatology service at CHRISTUS is a closed staff model with an exclusive contract with Pediatrix for neonatology coverage. The Pediatric section of the medical staff is an open staff model with three types of physicians: 1) University of Texas Health Science Center School of Medicine (UTHSC-SOM) faculty physicians, 2) independent, private, community physicians, and 3) employed hospital-based physicians.

CHRISTUS operates a transport service with 400 neonatal and pediatric transports annually.

## ***Methodist Children’s Hospital of South Texas***

Methodist Children’s Hospital of South Texas (Methodist) was historically positioned as a strong second pediatric provider in San Antonio, but in 2008 has surpassed CHRISTUS in number of inpatient

admissions, at 7,000 admissions. Based on the number of beds, it is slightly smaller than CHRISTUS with 190 staffed beds. Services are organized within Methodist Hospital and focus services on children ages 0-16.

Methodist has developed a unique service offering in bone marrow and stem cell transplant programs. This program builds on the hematology/oncology services and other blood disorders programmatic expertise. Methodist also has expertise in cardiovascular care services with six pediatric cath labs providing both diagnostic and interventional procedures and a cardiac surgery program. Methodist operates a transport service including ambulance, helicopter and fixed-wing aircraft.

The Hospital has dedicated seven operating rooms to pediatric cases including rooms dedicated for neurosurgery and orthopedic surgery. It does not have a children's emergency room but has developed a separate children's entrance and has pediatric emergency nurses and board-certified pediatric emergency medicine physicians working in the main Emergency Department.

## ***University Health System, Janey Briscoe Children's Center***

Pediatric services at University Health System, Janey Briscoe Children's Center (UHS) are focused on high acuity trauma services. Through a relationship with the UTHSC-SOM, faculty physicians provide the acute and intensive care in 17 pediatric beds and 12 PICU beds. Pediatric care is provided in a closed staff model with physicians from UTHSC-SOM; UHS also has pediatric intensivists to care for patients on the PICU unit.

UHS also includes 56 NICU beds, with focus on care for unstable and at-risk infants. Neonatology services at UHS are provided in a closed staff model with UTHSC-COM neonatologists.

## ***Other San Antonio General Acute Care Hospitals***

Other general acute care hospitals within the San Antonio area provide neonatology services, and to a much smaller extent, pediatric services. Neonatal Intensive Care services are known to be provided at:

- Baptist Medical Center (8 beds)
- St. Luke's Baptist Hospital (18-bed Level III NICU)
- Northeast Baptist Hospital (24 beds)
- Metropolitan Methodist Hospital (16 beds)
- Southwest General (34-bed Level III NICU)

*Source: Texas Department of State Health Services, Hospital Beds Report 07/13/2009.*

*Notes: Wilford Hall Medical Center reports 24 NICU beds, however, admission information is not reported to the Texas Department of State Health Services database and therefore patient volumes are not included in this assessment. Methodist Stone Oak, with 9 NICU beds, did not have Neonatology volumes in 2008.*

These NICUs have a total of 100 beds and provide care to approximately 3,400 infants each year. According to discharge data from the State of Texas, these hospitals have a combined ADC of 77.6.

In addition to the NICUs listed above, Southeast Baptist Hospital, CHRISTUS Santa Rosa - City Centre, and CHRISTUS Santa Rosa New Braunfels offer Neonatal services. The number of NICU beds for these hospitals was not reported in the Texas Hospital Bed Licensure reports, however, these hospitals report a combined total of nearly 1,000 Neonatology admissions per year.



Based on publicly-available market information, no general acute care hospitals have dedicated pediatric units or promote children's services. Wilford Hall Medical Center has a 16-bed general pediatric unit and 6-bed PICU that provides care for children of Air Force personnel's families; approximately 1,400 admissions per year are made to these units. There are approximately 1,900 total pediatric admissions to all other hospitals (including Wilford Hall Medical Center) each year with an ADC of 27; a majority of these admissions are for children ages 15-17 that are typically treated at general hospitals at higher rates than younger children.

## Neonatology Market Summary

### *Neonatology Market Positioning by Provider*

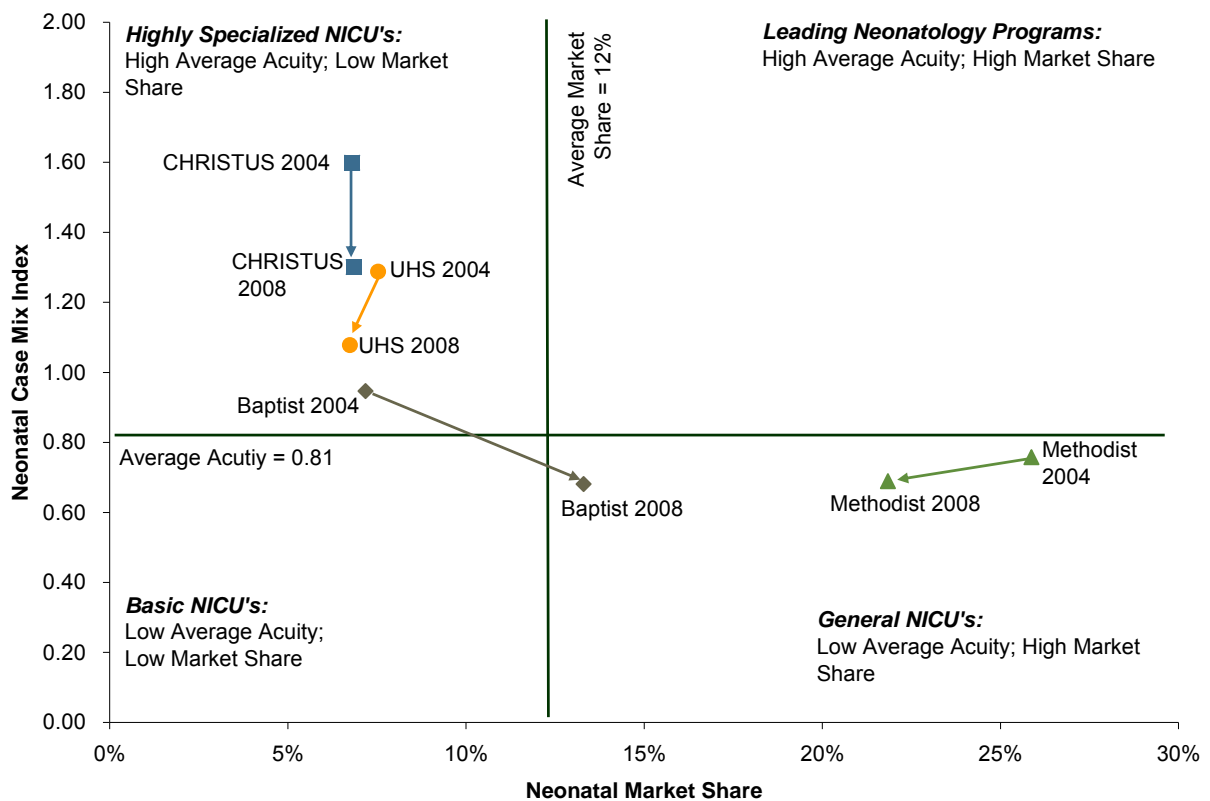
The graph in this section represents the interplay between a hospital's NICU beds and market position – either through high volumes and resulting market share, or with lower volumes and highly specialized services resulting in above average acuity, as represented by Case Mix Index (CMI). The graph is divided into four “market positions” dependent on the market share and acuity of the neonatology care provided.

- **Leading Neonatology Programs:** These hospitals have above average share and acuity within neonatology. This market position typically represents achievement of a dedicated and focused high-risk obstetrical delivery program plus a neonatology transport service and affiliations with an extended network of lower acuity delivery programs.
- **Highly Specialized NICU's:** These hospitals have below average share but above average neonatology acuity. This position typically indicates a highly specialized and complex neonatal program built around a small subset of physicians. Frequently these programs are not directly affiliated with large delivery programs and rely on inbound transfers for a considerable proportion of volumes.
- **General NICU's:** These hospitals have above average share but below average acuity within neonatology. Volumes in these hospitals are typically driven by large, general delivery programs with the vast majority of neonates born in the hospital and requiring low levels of neonatal care.
- **Basic NICU's:** These hospitals have below average share and acuity. These neonatal programs typically care for a small number of low acuity infants and transfer those with more acute conditions to a higher level NICU.

Within San Antonio, the market trend between 2004 and 2008 indicates that while the overall market size of neonatal admissions increased, the acuity level has declined from 0.98 CMI in 2004 to 0.81 CMI in 2008. This decline may be influenced by changing admission patterns driven by the practice patterns of neonatologists in the market. All four pediatric providers have experienced a decline in the acuity within neonatology services.

No neonatology provider currently is a market leader with both higher share and acuity. In terms of market share, Baptist has made a significant gain, building on the obstetrical capabilities more than the high-intensity NICU capabilities. Methodist had a decline in market share, while CHRISTUS and UHS had stable market share over the period. For the high-acuity infants, care is mainly provided at CHRISTUS and UHS.

Figure 7: San Antonio Pediatric Provider Positioning in Neonatology Services, 2004-2008.



Source: THCIC Inpatient data set, 2004-2008. UHS Internal ad hoc report from IDX system.

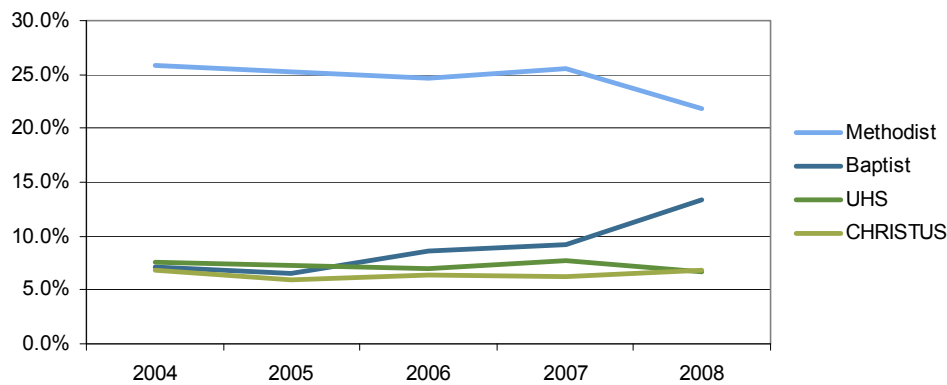
Note: State data set for 2004-2006 contained data errors and may undercount neonatology admissions. Data for UHS was corrected based on internal reports. Data for 2007-2008 are deemed accurate. Excludes Normal Newborns and admissions to hospitals outside of Texas.

## Market Share for Neonatal Services

For neonatology care within the San Antonio Market Area, Methodist is the predominant provider with 22% market share. After Methodist, there are nine other hospitals in the market with considerable neonatal size (each with 6%-13% of the total admissions). Care for the high-acuity infants is centralized in the four pediatric providers with 49% of all neonatology admissions and 64% of all days at one of these four hospitals.

In 2007 and 2008, Baptist significantly increased its volume of neonatology patients. Already perceived as having a strong obstetrical delivery service, the hospital has expanded care capabilities and resources dedicated to neonates and pediatric services. This increase has mainly impacted Methodist Hospital which experienced a corresponding decline in market share.

Figure 8: San Antonio Market Area Neonatology Market Share by Major Pediatric Provider, 2004-2008.



Source: THCIC Inpatient data set, 2004-2008. UHS Internal ad hoc report from IDX system.

Note: State data set for 2004-2006 contained data errors and may undercount neonatology admissions. Data for UHS was corrected based on internal reports. Data for 2007-2008 are deemed accurate. Excludes Normal Newborns and admissions to hospitals outside of Texas. Total does not equal 100% of the market as admissions occur at other hospitals.

## Neonatology Admissions by Other Providers

San Antonio general acute care hospitals, to varying degrees, offer neonatology services and collectively serve 50% of the neonatology admissions and 36% of neonatology patient days. Outmigration to other general acute care hospitals or children’s hospitals in Texas is approximately 1% of admissions. The majority of these admissions is to hospitals surrounding the Market Area and may be in closer geographic proximity to the location of the hospital where the birth occurred (for example, Peterson Regional Medical Center in Kerrville).

In evaluating the opportunity for a free-standing children’s hospital in San Antonio, it will be important to consider the current volumes of neonatology at the major obstetrical delivery hospitals: Metropolitan Methodist Hospital, Baptist Medical Center, Northeast Baptist Hospital and Southwest General Hospital. High-acuity infants requiring advanced surgical care may require transfer from these NICU’s to a children’s hospital for care.

Table 9: San Antonio Market Area Neonatology Admissions by Provider, 2004-2008.

	2004	2005	2006	2007	2008	2008 Share
<b>San Antonio Pediatric Providers</b>						
CHRISTUS Santa Rosa Children's Hospital	489	449	500	548	596	7%
Methodist Hospital	1,860	1,924	1,942	2,255	1,902	22%
North Central Baptist Hospital	516	493	676	813	1,158	13%
University Health System	542	552	555	685	587	7%
<b>San Antonio General Acute Care Hospitals</b>						
Baptist Medical Center	370	583	635	708	770	9%
Northeast Baptist Hospital	434	427	482	600	686	8%
Saint Luke's Baptist Hospital	643	726	505	649	553	6%
Southeast Baptist Hospital	45	71	56	36	22	0%
CHRISTUS Santa Rosa - City Centre	759	652	654	575	562	6%
CHRISTUS Santa Rosa Hospital New Braunfels	208	243	223	270	287	3%
Metropolitan Methodist Hospital	650	719	821	964	876	10%
NIX Health Care System	55	71	73	77	68	1%
South Texas Regional Medical Center	30	46				0%
Southwest General Hospital	524	595	658	578	551	6%
<b>Texas Children's Hospitals</b>						
Dell Children's Medical Center of Central Texas	5	2	5		2	0%
Driscoll Children's Hospital					2	0%
Memorial Hermann - Texas Medical Center		3	3		1	0%
Texas Children's Hospital	10	1		1	2	0%
<b>All Other Texas Hospitals</b>	50	62	80	82	82	1%
<b>Total</b>	<b>7,190</b>	<b>7,619</b>	<b>7,868</b>	<b>8,841</b>	<b>8,707</b>	<b>100%</b>

Source: THCIC Inpatient data set, 2004-2008. UHS Internal ad hoc report from IDX system.

Note: State data set for 2004-2006 contained data errors and may undercount neonatology admissions. Data for UHS was corrected based on internal reports. Data for 2007-2008 are deemed accurate. Excludes Normal Newborns and admissions to hospitals outside of Texas.

## Neonatology In-Migration

In-migration of neonates occurs either by the mother traveling to San Antonio for delivery or transfer of the infant after delivery. In 2007 and 2008, there were approximately 560-580 infants receiving NICU care in a San Antonio hospital that resided outside of the Market Area – 6.2% of all neonatology admissions. While this is a small number of admissions, these infants have longer Average Length of Stay (ALOS) 18.9 days vs. 9.1 days of Market Area infants) and account for almost 14% of all neonatal patient days. These infants are largely cared for at Methodist CHRISTUS, and UHS.

Table 10: In-migration Neonatology Admissions by Provider, 2004-2008.

	2004	2005	2006	2007	2008
<b>San Antonio Pediatric Providers</b>					
CHRISTUS Santa Rosa Children's Hospital	101	105	93	126	119
Methodist Hospital	156	170	180	177	204
North Central Baptist Hospital	10	17	18	25	43
University Health System	92	94	94	116	100
<b>San Antonio General Acute Care Hospitals</b>					
Baptist Medical Center	2	5	7	5	6
CHRISTUS Santa Rosa - City Centre	42	52	43	61	31
Metropolitan Methodist Hospital	9	12	9	12	5
NIX Health Care System		2	2	1	3
Northeast Baptist Hospital	8	17	12	16	21
Saint Luke's Baptist Hospital	13	20	14	11	24
Southeast Baptist Hospital		2	1	3	
Southwest General Hospital	6	5	6	6	22
<b>Total</b>	<b>439</b>	<b>501</b>	<b>479</b>	<b>559</b>	<b>578</b>

Source: THCIC Inpatient data set, 2004-2008. UHS Internal ad hoc report from IDX system.

Note: State data set for 2004-2006 contained data errors and may undercount neonatology admissions. Data for UHS was corrected based on internal reports. Data for 2007-2008 are deemed accurate. Excludes Normal Newborns and admissions to hospitals outside of Texas.

## Pediatric Market Summary

### *Pediatric Market Positioning by Provider*

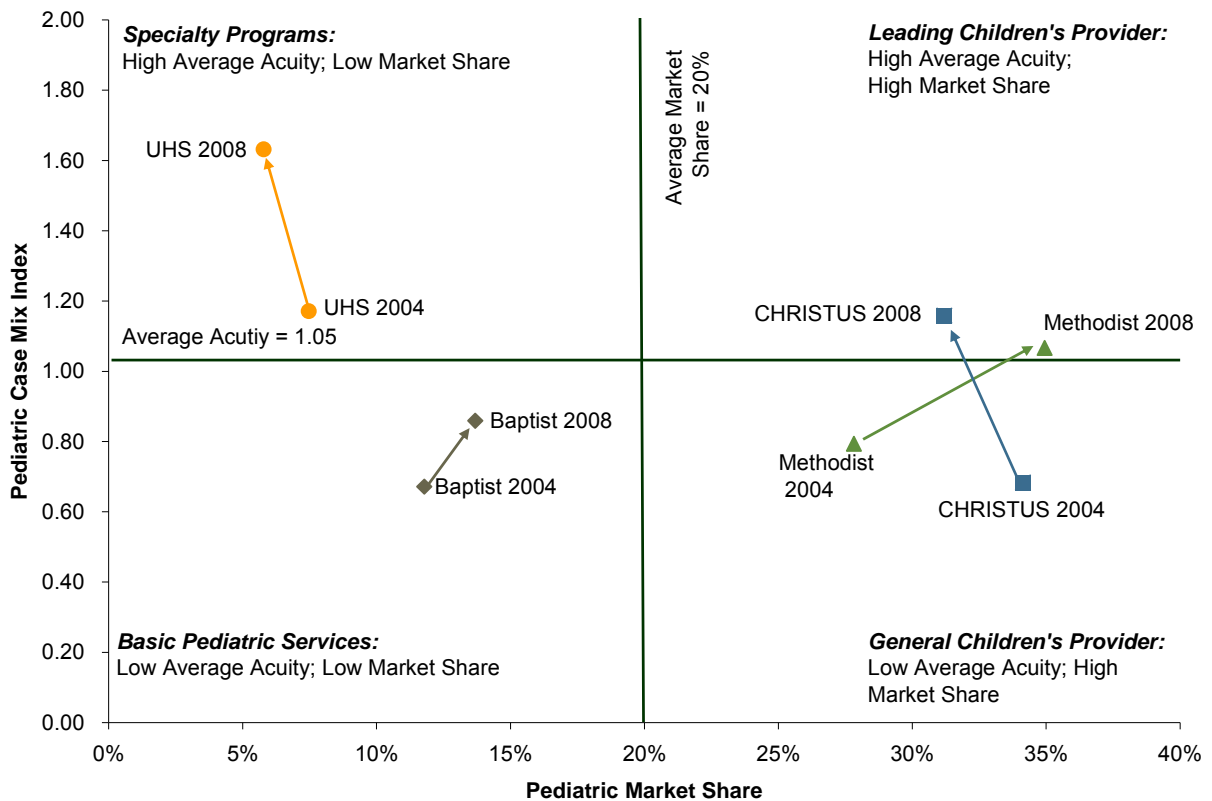
The graph in this section represents the interplay between a hospital's pediatric beds and pediatric market position – either through high volumes and resulting market share, or with lower volumes and highly specialized services resulting in above average acuity (as represented by CMI). The graph is divided into four “market positions” dependent on the market share and acuity of the pediatric care provided.

- **Leading Children's Provider:** These hospitals have above average share and acuity within pediatrics. This market position typically represents achievement of a dedicated and focused pediatric strategy and strong relationship with key physicians to advance both the complexity of care and the overall size of the pediatric service.
- **Specialty Programs:** These hospitals have below average share but above average acuity within pediatrics. This position typically indicates a highly specialized and complex pediatric program built around subspecialty physicians.
- **General Children's Provider:** These hospitals have above average share but below average acuity within pediatrics. Patient volumes may be driven by access portals (e.g. ED admissions, transport services) more than reputation or technical expertise for advanced pediatric care.
- **Basic Pediatric Services:** These hospitals have below average share and acuity. Generally the hospital has a historical pattern of offering standard or minimal pediatric services or has been unsuccessful at recruiting key physicians and developing pediatrics services further.

Within San Antonio, the dispersion of pediatric care among the four pediatric providers has resulted in an absence of any clear pediatric leader – a children’s hospital with both high technical expertise and large market share. This is a major impediment to advancing pediatric care as the centralization of volumes in pediatrics is critical to supporting dedicated, pediatric-trained physicians and hospital-based resources. Since 2004, the acuity level of the market overall has increased from 0.72 CMI to 1.05 CMI indicating changing admission criteria focusing inpatient care on only the sickest of children. During the same period, all four providers increased acuity of services with UHS and CHRISTUS experiencing the largest increases in CMI. Both Methodist and Baptist, while increasing the acuity rates at low levels, achieved much larger gains in market share.

Today, both UHS and CHRISTUS are positioned as “Specialty Programs” in pediatric care – offering higher acuity care built on unique capabilities and resources. Methodist and Baptist are both increasing acuity while being positioned as a general pediatric service with a larger proportion of lower acuity patients.

Figure 9: San Antonio Pediatric Provider Positioning, 2004-2008.



Source: THIC Inpatient data set, 2004-2008.

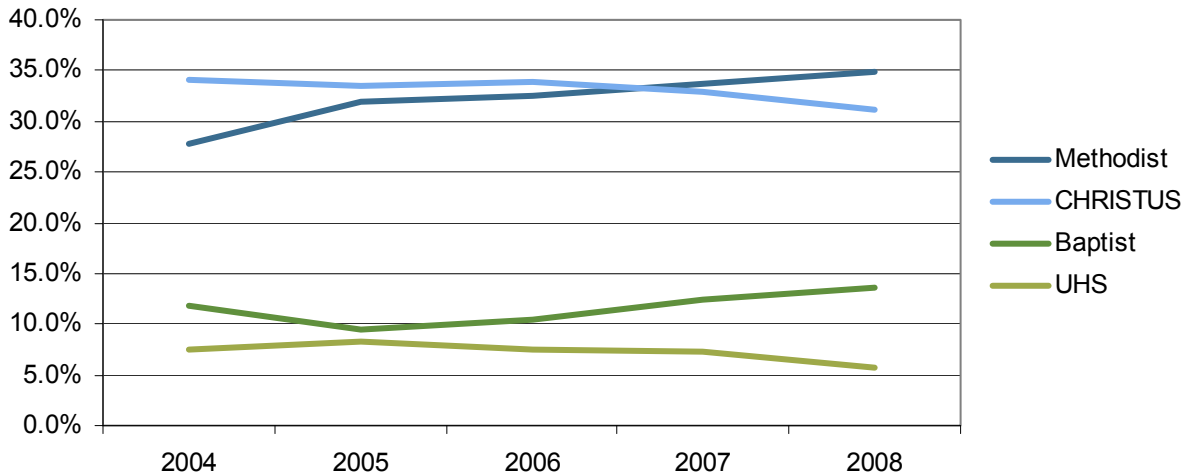
Note: Excludes Normal Newborns, Neonatology, Obstetric and Gynecology admissions. Excludes admissions to hospitals outside of Texas.

## Market Share for Pediatric Services

For pediatric care, CHRISTUS has historically been the leading pediatric provider with approximately 34% of all pediatric admissions. Over the past four years, Methodist has advanced its market position and in 2008 surpassed CHRISTUS in providing pediatric care.

Baptist has reversed a declining trend and had increasing market share over the past four years. During the same period, UHS has experienced declines in market position.

Figure 10: San Antonio Market Area Pediatric Market Share by Major Pediatric Provider, 2004-2008.



Source: THCIC Inpatient data set, 2004-2008.

Note: Excludes Normal Newborns, Neonatology, Obstetric and Gynecology admissions. Excludes admissions to hospitals outside of Texas. Total does not equal 100% of the market as admissions occur at other hospitals.



## *Pediatric Admissions by Other Providers*

Pediatric admissions to general acute care hospitals within San Antonio have declined by 27% over the past four years as 565 pediatric admissions have shifted to the four major pediatric providers. San Antonio hospitals collectively provide 98% of all pediatric care with only 2% of admissions at hospitals outside the Market Area (e.g. to Dell Children’s Hospital or Texas Children’s Hospital). Based on KSA’s experience in other similar markets, this level of outmigration is lower than expected indicating there is little opportunity to increase local pediatric service size by stemming outmigration.

Table 11: San Antonio Market Area Pediatric Admissions by Provider, 2004-2008.

	2004	2005	2006	2007	2008	2008 Share
<b>San Antonio Pediatric Providers</b>						
CHRISTUS Santa Rosa Children's Hospital	4,226	4,038	4,257	4,374	3,875	31%
Methodist Hospital	3,444	3,852	4,087	4,481	4,341	35%
North Central Baptist Hospital	1,458	1,142	1,299	1,640	1,700	14%
University Health System	925	1,001	946	965	719	6%
<b>San Antonio General Acute Care Hospitals</b>						
Baptist Medical Center	49	42	30	36	26	0%
Northeast Baptist Hospital	30	43	38	30	28	0%
Saint Luke's Baptist Hospital	30	26	27	15	11	0%
Southeast Baptist Hospital	71	48	40	32	26	0%
CHRISTUS Santa Rosa - City Centre	39	43	45	35	137	1%
CHRISTUS Santa Rosa Hospital New Braunfels	303	279	298	267	242	2%
CHRISTUS Santa Rosa Medical Center	41	29	13	16	12	0%
Methodist Specialty & Transplant Hospital	643	591	538	493	491	4%
Metropolitan Methodist Hospital	15	15	29	29	24	0%
NIX Health Care System	671	587	636	566	529	4%
Northeast Methodist Hospital	45	40	38	29	13	0%
South Texas Regional Medical Center	153	130				0%
Southwest General Hospital	32	12	18	20	18	0%
<b>Texas Children's Hospitals</b>						
Children's Medical Center of Dallas	10	5		10	7	0%
Dell Children's Medical Center of Central Texas	17	17	30	40	60	0%
Driscoll Children's Hospital	19	15	15	26	26	0%
Memorial Hermann - Texas Medical Center	15	9	9	6	11	0%
Texas Children's Hospital	31	44	42	59	65	1%
<b>All Other Texas Hospitals</b>						
	114	79	102	94	62	0%
<b>Grand Total</b>	<b>12,381</b>	<b>12,087</b>	<b>12,537</b>	<b>13,263</b>	<b>12,423</b>	<b>100%</b>

Source: THIC Inpatient data set, 2004-2008.

Note: Excludes Normal Newborns, Neonatology, Obstetric and Gynecology admissions. Excludes admissions to hospitals outside of Texas.

## *Pediatric In-Migration*

In-migration of children for pediatric care to San Antonio hospitals is highly concentrated with two-thirds of in-migration admissions at CHRISTUS and Methodist; UHS also garners a high number. NIX Healthcare has increased the number of admissions from the broader geography over the past two years. Baptist is a minimal provider to children from outside of the San Antonio Market Area.

Table 12: In-migration Pediatric Admissions by Provider, 2004-2008.

	2004	2005	2006	2007	2008
<b>San Antonio Pediatric Providers</b>					
CHRISTUS Santa Rosa Children's Hospital	587	575	619	683	691
Methodist Hospital	599	622	557	616	608
North Central Baptist Hospital	121	66	60	79	78
University Health System	332	330	357	373	334
<b>San Antonio General Acute Care Hospitals</b>					
Baptist Medical Center	1	1	2	4	
Northeast Baptist Hospital	1	3		4	
Saint Luke's Baptist Hospital	1		1		1
Southeast Baptist Hospital	1	1		1	
CHRISTUS Santa Rosa - City Centre	2	1		3	14
CHRISTUS Santa Rosa Medical Center	1	6	5	3	1
Methodist Ambulatory Surgery Hospital NW	4	7	7	6	3
Methodist Specialty & Transplant Hospital	67	63	50	43	25
Metropolitan Methodist Hospital	1	1		2	
Northeast Methodist Hospital	-	1	6		2
NIX Health Care System	86	98	95	150	140
Southwest General Hospital				1	1
TexSan Heart Hospital					1
<b>Total</b>	<b>1,805</b>	<b>1,780</b>	<b>1,753</b>	<b>1,968</b>	<b>1,899</b>

Source: THCIC Inpatient data set, 2004-2008.

Note: Excludes Normal Newborns, Neonatology, Obstetric and Gynecology admissions. Excludes admissions to hospitals outside of Texas.

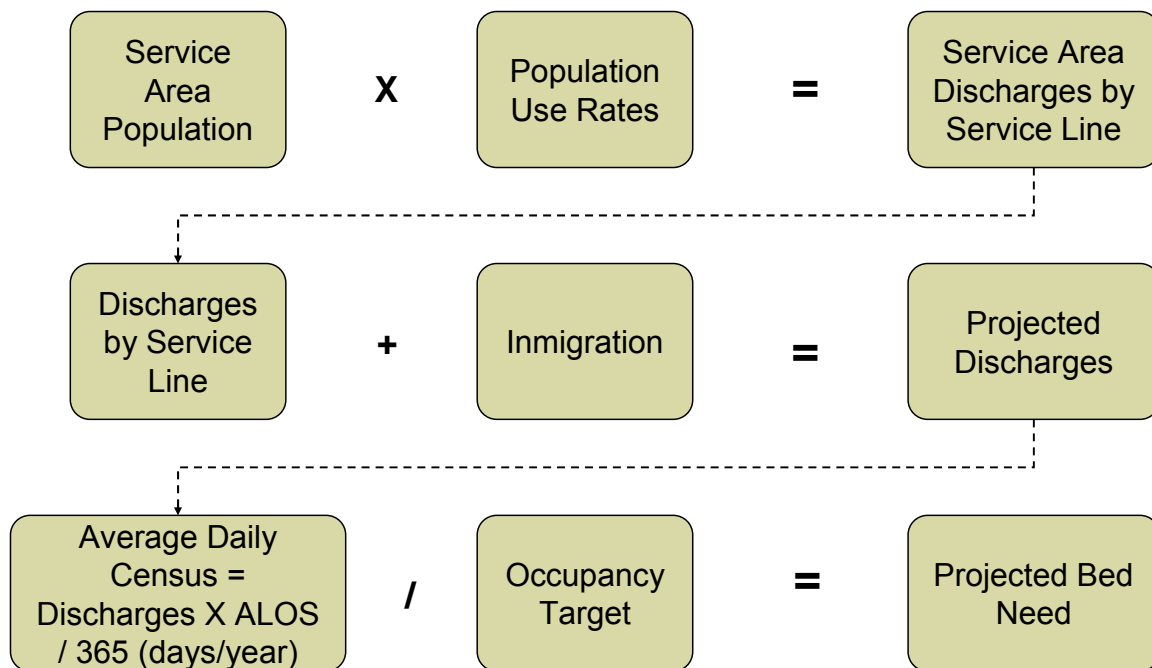
## Introduction

This section reviews historical patterns and projects the need for pediatric inpatient services within the San Antonio Market Area. In defining pediatric inpatient care, KSA has included all admissions for patients under the age of 18, excluding normal newborns. We have also excluded admissions for obstetrical care, gynecology, and substance abuse as these types of care are typically provided in specialty units rather than a children’s hospital setting.

## Methodology

Figure 11 illustrates the methodology KSA applied to evaluate inpatient demand and corresponding bed need. Using Claritas population and THCIC discharge data, a use-rate (admissions per 1,000 children) was derived with consideration of age cohorts and service lines. The projected number of admissions was calculated by applying the use-rates to Market Area population projections. In-migration of children from a broader geography to San Antonio hospitals was included in the total projected admissions. Lastly, average length-of-stay was applied to calculate the average daily census (ADC). Total market-wide bed need was developed based on the ADC and assumptions about the occupancy rate by unit type.

Figure 11: Inpatient Projection Model



## Inpatient Admissions

The following section describes the recent historical need for inpatient hospitalization in the San Antonio market. Admissions and corresponding number of patient days are analyzed and illustrated in the following section:

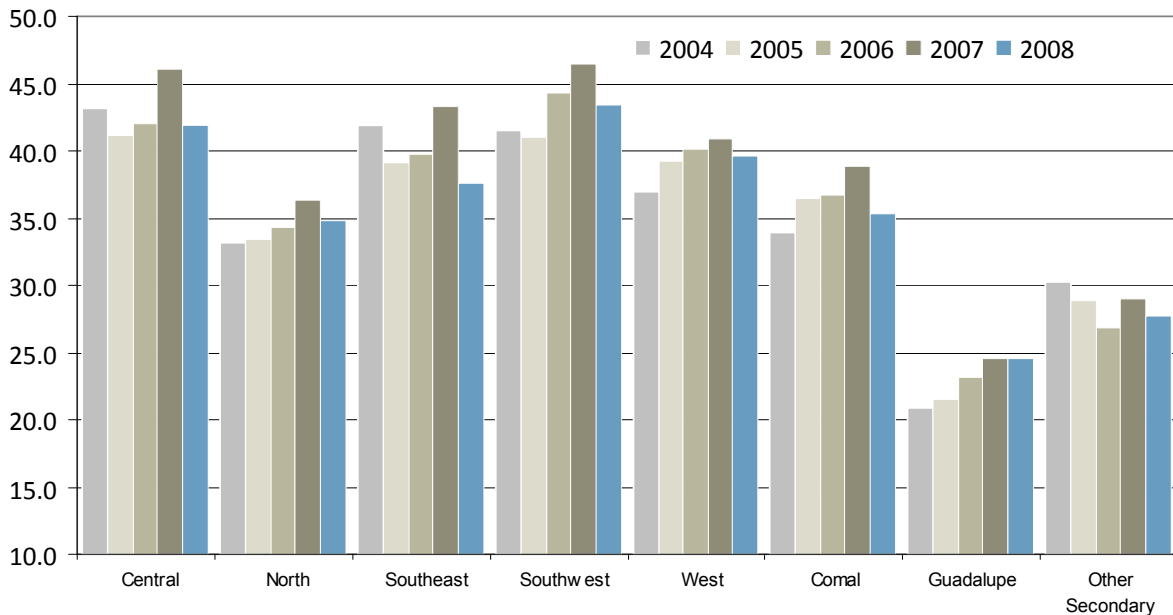
- Admissions by Market Area, age cohort, and service
- Use-rate by Market Area and age cohort
- Average daily census in San Antonio by level of service (NICU, PICU, and medical/surgical pediatrics).

An understanding of these factors provides insight into historical pediatric demand and forms the basis of the future inpatient demand projections and resources (beds) required.

### Historical Inpatient Use-Rates

While the overall pediatric inpatient use-rate has been variable across the Market Areas and PMA sub-markets, the overall trend has been within a range of approximately 32 to 45 admissions per 1,000 children. The more distant rural portions of the SMA have use-rates that are below the PMA rates and Comal County – a pattern typically exhibited by geographic distance from a large base of providers and limited local access to care. In all market areas, inpatient admissions in 2008 have declined from 2007.

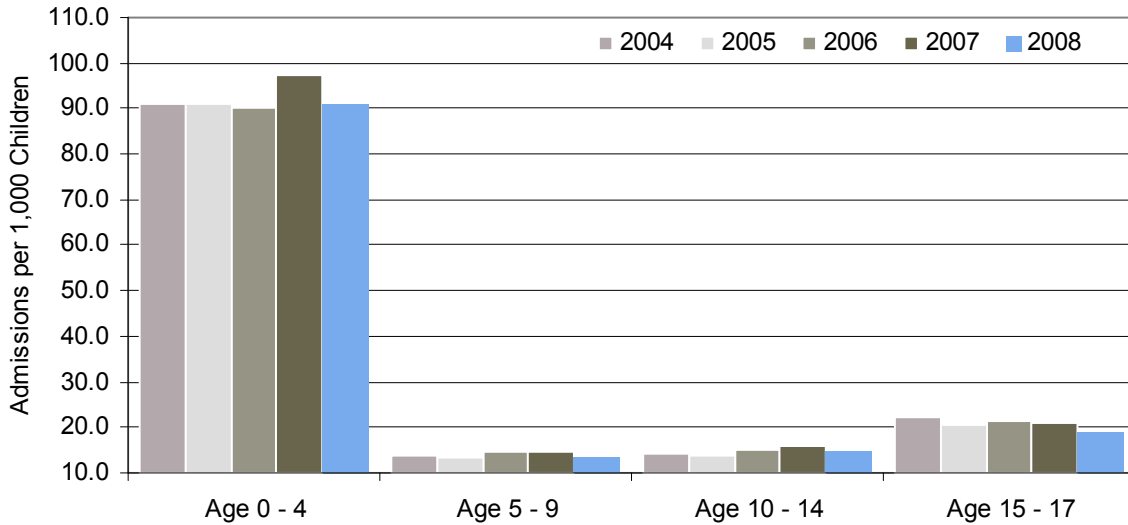
Figure 12: Pediatric Inpatient Use-Rates by Sub-Market Area, 2004-2008, Discharges per 1,000 Children of All Ages.



Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.  
 \*Other SMA counties include Atascosa, Bandera, Frio, Kendall, Medina, and Wilson.

Market (PMA and SMA) use-rates for children under 15 years have been stable over the past five years. Children under the age of 5 are the highest users of inpatient services at approximately four times the rate of older children; many of these admissions are for neonatology services.

Figure 13: Inpatient Use-Rate by Age Cohort, Primary and Secondary Market Areas, 2000-2008.



Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

## Historical Inpatient Admissions

Pediatric admissions in the Primary and Secondary Market Areas have grown at a CAGR of nearly 2% over the past five years. Patients originating from the Primary Service account for approximately 85% of all pediatric admissions within the market. The Central sub-market is the source of the most admissions, while the West and North sub-markets have increased at the highest rates among PMA sub-markets.

Growth in the PMA is the result of admission increases from the North, Southwest, and West sub-markets. Admissions from the Central and Southeast decreased slightly. Population growth in the counties to the northeast of Bexar County, Comal and Guadalupe (also the two most populous among the SMA counties) has resulted in the highest growth in admissions among the SMA counties over the past five years.

Table 13: Pediatric Inpatient Admissions for Primary Sub-Markets and SMA, 2004-2008.

	2004	2005	2006	2007	2008	CAGR
Primary SA						
Central	6,780	6,504	6,678	7,353	6,702	-0.3%
North	3,862	3,995	4,215	4,573	4,509	3.9%
Southeast	1,574	1,476	1,511	1,656	1,451	-2.0%
Southwest	1,020	1,015	1,101	1,159	1,090	1.7%
West	3,266	3,599	3,806	4,012	4,018	5.3%
Comal	902	1,001	1,044	1,145	1,074	4.5%
Guadalupe	540	557	604	639	643	4.5%
Other SMA*	1,635	1,566	1,467	1,594	1,537	-1.5%
<b>Total</b>	<b>19,579</b>	<b>19,714</b>	<b>20,426</b>	<b>22,130</b>	<b>21,024</b>	<b>1.8%</b>

Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

Note: CAGR is the Compound Annual Growth Rate

\*Other SMA counties include Atascosa, Bandera, Frio, Kendall, Medina, and Wilson.

## Admissions by Age Cohort

Care for children under age 5 accounts for approximately 70% of all pediatric admissions in the San Antonio market. The majority of these admissions are for neonatology and conditions present at birth. It is critical that this is clearly understood in any children’s hospital planning, as the facilities, resources and programs must be developed specifically to care for newborns, infants and toddlers. Care for children between the ages of 5 and 17 are approximately equally split with 2,000 admissions per age cohort each year.

Table 14: Pediatric Inpatient Admissions by Age Cohort, 2004-2008.

	2004	2005	2006	2007	2008	CAGR
Age 0 - 4	13,518	13,846	14,052	15,555	14,928	2.5%
Age 5 - 9	2,022	1,984	2,206	2,254	2,085	0.8%
Age 10 - 14	2,078	2,049	2,224	2,412	2,251	2.0%
Age 15 - 17	1,961	1,835	1,944	1,909	1,760	-2.7%
<b>Total</b>	<b>19,579</b>	<b>19,714</b>	<b>20,426</b>	<b>22,130</b>	<b>21,024</b>	<b>1.8%</b>

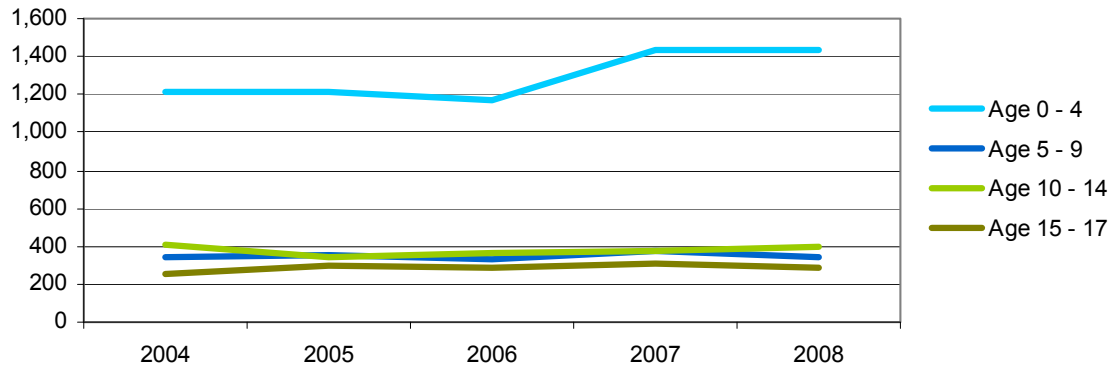
Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

Note: CAGR is the Compound Annual Growth Rate

## In-migration

Admissions for children from geographies outside the PMA and SMA have been stable over the past five years; data indicates that neonatology admissions increased significantly in 2007, however, data from 2004-2006 may contain data errors in the State data set and may not accurately reflect the full number of admissions – 2007 and 2008 data is an accurate reflection of the current market size. Over the past five years, neonatal in-migration has represented approximately 56% of all in-migration admissions.

Figure 14: Pediatric In-migration Admissions by Age Cohort.



Source: THCIC Inpatient data set, 2004-2008.

Note: State data set for 2004-2006 contained data errors and may undercount neonatology admissions. Data for 2007-2008 are deemed accurate. Excludes Normal Newborns and admissions to hospitals outside of Texas.

Neonatology admissions – the largest service line – had data accuracy errors within the THCIC State data set for 2004-2006; data for 2007 and 2008 are deemed an accurate reflection of the patient volumes.

Most high-volume services, including Surgery, GI Services, Neurology, and Orthopedic & Spine Surgery, have not experienced significant volume changes over the past five years.

Table 15: Inpatient Admissions by Service Line, 2004-2008.

	2004	2005	2006	2007	2008	CAGR
Neonatology	7,669	8,094	8,330	9,470	9,354	5.1%
General Medicine & Pulmonary	5,914	5,603	5,763	6,430	5,823	-0.4%
General Surgery	1,485	1,437	1,532	1,582	1,487	0.0%
Gastroenterology	1,248	1,381	1,320	1,307	1,300	1.0%
Psychiatry	1,467	1,337	1,309	1,250	1,213	-4.6%
Orthopedic Surgery & Spine Surgery	863	813	987	963	871	0.2%
Neurology	797	798	785	878	758	-1.2%
Otolaryngology	498	614	628	722	720	9.7%
Oncology - Medical	365	269	304	363	363	-0.1%
Trauma	233	231	230	311	283	5.0%
Neurosurgery	243	262	272	291	281	3.7%
Cardiovascular & Vascular Surgery	221	227	248	229	249	3.0%
Urology	224	200	198	193	187	-4.4%
Medical Cardiology	145	177	178	178	183	6.0%
Thoracic Surgery	76	76	80	94	107	8.9%
Burns	53	83	85	100	85	12.5%
Ophthalmology	62	64	81	63	75	4.9%
Transplant	50	53	52	71	50	0.0%
Interventional Cardiology Electrophysiology	32	29	35	33	30	-1.6%
Rehabilitation	28	30	36	37	29	0.9%
Plastic Surgery	92	87	70	25	26	-27.1%
Oncology - Surgical	20	21	12	15	12	-12.0%
Other/Ungrouped	7	26	35	24	0	-100.0%
<b>Grand Total</b>	<b>21,792</b>	<b>21,912</b>	<b>22,570</b>	<b>24,629</b>	<b>23,486</b>	<b>1.9%</b>

Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

Note: CAGR is the Compound Annual Growth Rate. State data set for 2004-2006 contained data errors and may undercount neonatology admissions. Data for 2007-2008 are deemed accurate. Excludes Normal Newborns and admissions to hospitals outside of Texas.

## Pediatric Average Length of Stay

The overall average length of stay (ALOS) for pediatric admissions has ranged from 5.8 to 6.8 days over the past five years with an increasing trend during the past four years. The market ALOS of 6.8 days is more than 40% above the national ALOS of 4.8 days, which includes admission to short-stay pediatrics



units in adult hospitals and admissions of children to adult hospitals that do not have discrete pediatrics beds.<sup>3</sup>

Table 16: Average Length of Stay by Service Line. 2004-2008.

	2004	2005	2006	2007	2008
Transplant	23.7	31.8	32.3	29.3	26.4
Rehabilitation	26.6	23.1	20.4	25.1	22.9
Oncology - Surgical	11.7	14.3	11.1	13.0	18.3
Cardiovascular & Vascular Surgery	11.4	12.1	10.6	11.7	13.3
Thoracic Surgery	10.8	11.8	12.6	10.0	12.7
Neonatology	8.9	8.0	8.3	9.4	9.6
Neurosurgery	7.3	6.8	6.9	7.2	8.1
Medical Cardiology	6.1	5.7	5.6	4.5	6.9
General Surgery	5.7	5.7	5.1	5.7	6.7
Oncology - Medical	5.3	6.6	6.5	5.7	6.3
Interventional Cardiology EP	3.6	3.2	3.9	3.9	5.7
Psychiatry	5.4	5.9	5.9	5.9	5.5
Ophthalmology	5.0	3.6	4.1	4.7	5.1
Plastic Surgery	3.4	4.0	3.8	4.2	4.4
Orthopedic Surgery & Spine Surgery	4.1	4.0	3.8	4.0	4.4
General Medicine & Pulmonary	3.7	3.9	3.7	3.9	4.1
Urology	3.5	3.8	3.6	4.8	3.8
Neurology	3.6	3.4	3.1	3.9	3.5
GI Svcs	3.2	3.1	3.2	3.2	3.5
Burns	3.5	3.2	4.7	3.8	3.5
Trauma	3.1	2.2	3.2	2.8	3.2
ENT	2.8	2.5	2.8	2.9	2.7
Other/Ungrouped	1.7	16.1	8.6	6.8	-
Overall Average	6.0	5.8	5.9	6.4	6.8

Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

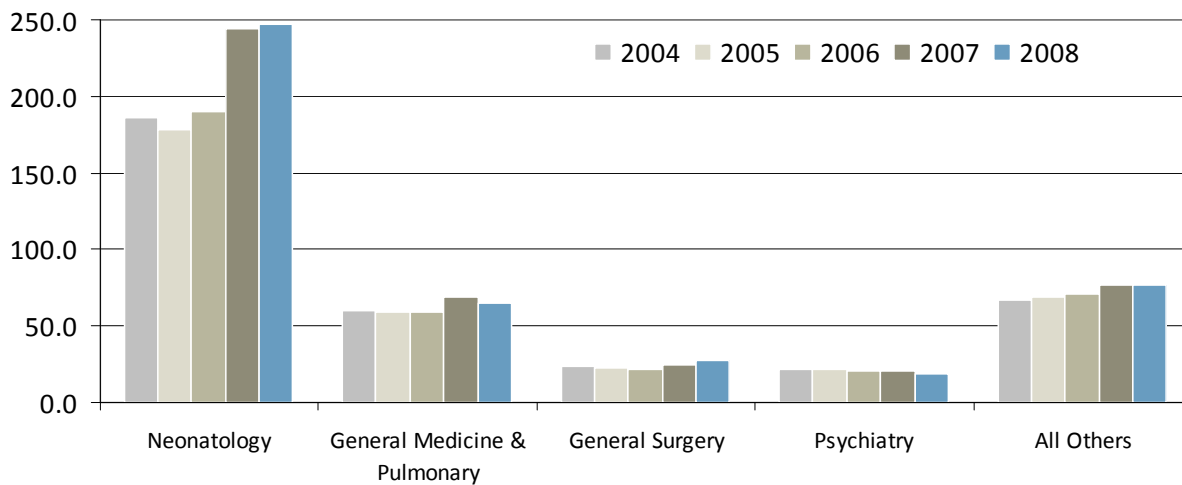
Note: CAGR is the Compound Annual Growth Rate. State data set for 2004-2006 contained data errors and may undercount neonatology admissions. Data for 2007-2008 are deemed accurate. Excludes Normal Newborns and admissions to hospitals outside of Texas.

<sup>3</sup> 2006 National Hospital Discharge Survey, U.S. Department Of Health And Human Services, Centers for Disease Control and Prevention National Center for Health Statistics, July 2008.

## Pediatric Average Daily Census

A function of both the admissions and the ALOS, the Average Daily Census (ADC) is a reflection of the number of children hospitalized for pediatric care on any given day. Neonatology – with both the largest number of admissions and a long ALOS - accounts for the most inpatient days among services. Approximately 10% of neonatology ADC is attributed to in-migration from patients outside of the San Antonio Market Area.

Figure 15: Total Market Area Average Daily Census by Service Line, 2004-2008.



Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

Note: State data set for 2004-2006 contained data errors and may undercount neonatology admissions. Data for 2007-2008 are deemed accurate. Excludes Normal Newborns and admissions to hospitals outside of Texas.

## Projected Inpatient Admissions

### *Assumptions of Future Demand*

Future admissions patterns and estimates are informed by the historical admissions and assumptions about the national, state and local changes impacting future pediatric care delivery. The multitude of forces impacting pediatric admission rates – both increasing and decreasing use-rates and length of stay – require careful consideration. KSA recommends two main assumptions to distill the range of impacts:

- Use-rate increase of 4% between 2008 and 2020: Currently 22% of children in Texas are uninsured and access care at approximately 20% lower rates than Medicaid or Insured children.<sup>4</sup> A wide range of proposed bills, public policy debates and coverage expansion plans are being discussed at both the State and Federal level to expand coverage to uninsured children. If this occurs during the planning horizon, KSA estimated the impact will be a 4% increase in pediatric use-rates; 22% of children using care at a 20% higher rate than today's use translates to a 4% overall increase in use-rate.
- Length of stay decline by 12%: Concurrent with expanding coverage to include uninsured children, KSA expects State and Federal initiatives to manage the overall cost of care. Current ALOS in the San Antonio market area is significantly above national ALOS and therefore likely to be impacted with a significant reduction in patient days. Furthermore, Medicaid, SCHIP and Commercial Insurers will increasingly apply efficacy metrics and standardized care protocols to reimbursement schedules; providers will be incentivized to reduce length of stay through improved operations and case management. We assume that ALOS will decline to provide an equivalent off-set of the 4% increase in use-rate; the corresponding ALOS decline is 12%.

These two main assumptions were applied to the projection based on the historical market admissions patterns to yield the future admissions.

### *Projected Admissions*

Pediatric admissions will grow to 27,900 by 2020 with a stable rate of growth between now and 2015 and a lower rate of growth between 2015 and 2020. Total Market Area pediatric admissions will increase by 2,700 incremental new admissions per year – a total increase of 11% over ten years.

After a period distinct growth from 2000 to 2010, particularly in Central and West sub-markets, admissions from the PMA are expected to grow at a lower rate from 2010 to 2020, with a slight decline in growth rate during the second half of the decade.

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<sup>4</sup> In Harms Way; True Stories of Uninsured Texas Children, Children's Defense Fund, 2009.

Table 17: Projected Pediatric Admissions by Market Area, 2005-2020.

	2005	2010	2015	2020	CAGR
Primary MA					
Central	6,500	7,100	7,500	7,500	1.0%
North	4,000	4,800	5,300	5,300	1.9%
Southeast	1,500	1,600	1,700	1,700	1.1%
Southwest	1,000	1,100	1,200	1,200	1.2%
West	3,600	4,300	4,800	4,800	2.0%
<b>PMA Subtotal</b>	<b>16,600</b>	<b>19,000</b>	<b>20,500</b>	<b>20,600</b>	<b>1.5%</b>
Comal	1,000	1,200	1,400	1,600	3.1%
Guadalupe	600	600	700	700	1.8%
Other SMA*	1,600	1,700	1,800	2,000	1.6%
<i>In-migration</i>	2,200	2,700	2,900	3,000	2.1%
<b>Total</b>	<b>21,900</b>	<b>25,200</b>	<b>27,400</b>	<b>27,900</b>	<b>1.6%</b>

Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

Note: CAGR is the Compound Annual Growth Rate

\*Other SMA counties include Atascosa, Bandera, Frio, Kendall, Medina, and Wilson.

Admissions by age cohort will continue to grow in all groups through 2015; subsequently the growth in admissions for children under age 5 will be flat as driven by Texas State projections of declining birth rates beyond 2015. Increases in admissions for children ages 5-17 will continue to increase due to the aging of the younger children.

Table 18: Projected Pediatric Inpatient Admissions by Age Cohort.

	2005	2010	2015	2020	CAGR
Age 0 – 4	15,100	17,400	19,000	19,000	1.6%
Age 5 - 9	2,300	2,600	2,800	2,900	1.4%
Age 10 - 14	2,400	2,700	2,900	3,100	1.7%
Age 15 - 17	2,100	2,400	2,600	2,900	2.2%
<b>Total</b>	<b>21,900</b>	<b>25,200</b>	<b>27,400</b>	<b>27,900</b>	<b>1.6%</b>

Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

Note: CAGR is the Compound Annual Growth Rate

## Projected Average Daily Census

Based on the assumptions related to use-rate and ALOS, the expected increase in use-rate is offset by the decline in ALOS over the next five years. The increase in the total patient days and ADC will be driven by the underlying demography of the San Antonio market area. The net result is an increase in ADC of 29% between 2005 and 2020.

Patients receiving care in the NICU are coded in virtually all service lines. The majority of infants are coded within the Neonatology service line; however, infants with specific diagnosis are included in the admissions of the respective service lines (e.g., Cardiac Surgery, General Surgery, etc.). KSA has applied the assumption that all neonatology admissions plus 70% of the admissions in other service lines for

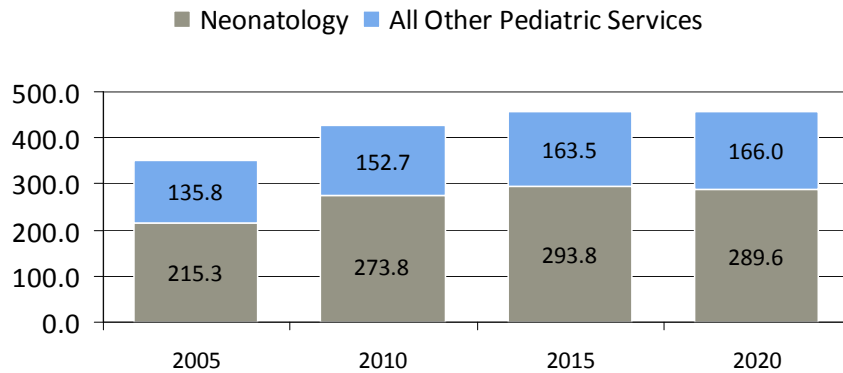
infants under 1-year of age will receive care in the NICU based on admission patterns from KSA's experience in similar markets.

Table 19: Patient Days and Patients' Age 0-1 ADC by Service Line, 2008.

Service Line	Total	NICU (70% of Days)	PICU (7.5% of Days)	Pediatric (22.5% of Days)
Burns	14	10	1	3
Cardiovascular Surgery	1,115	781	84	251
ENT	500	350	38	113
General Medicine	2,189	1,532	164	493
General Surgery	1,915	1,341	144	431
GI Svcs	1,275	893	96	287
Interventional Cardiology EP	15	11	1	3
Medical Cardiology	463	324	35	104
Neurology	783	548	59	176
Neurosurgery	599	419	45	135
Oncology - Medical	80	56	6	18
Ophthalmology	64	45	5	14
Orthopedic Surgery	244	171	18	55
Plastic Surgery	25	18	2	6
Pulmonary	5,662	3,963	425	1,274
Rehabilitation	8	6	1	2
Spine Surgery	94	66	7	21
Thoracic Surgery	152	106	11	34
Transplant	67	47	5	15
Trauma	167	117	13	38
Ungroupable	167	117	13	38
Urology	115	81	9	26
Vascular Surgery	30	21	2	7
<b>Grand Total</b>	<b>15,743</b>	<b>11,020</b>	<b>1,181</b>	<b>3,542</b>
<b>ADC</b>		<b>30</b>	<b>3</b>	<b>10</b>

Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set

Figure 16: Projected Average Daily Census by Neonatology and Pediatric Patients, 2005-2020.



Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

## ***Pediatric Bed Need***

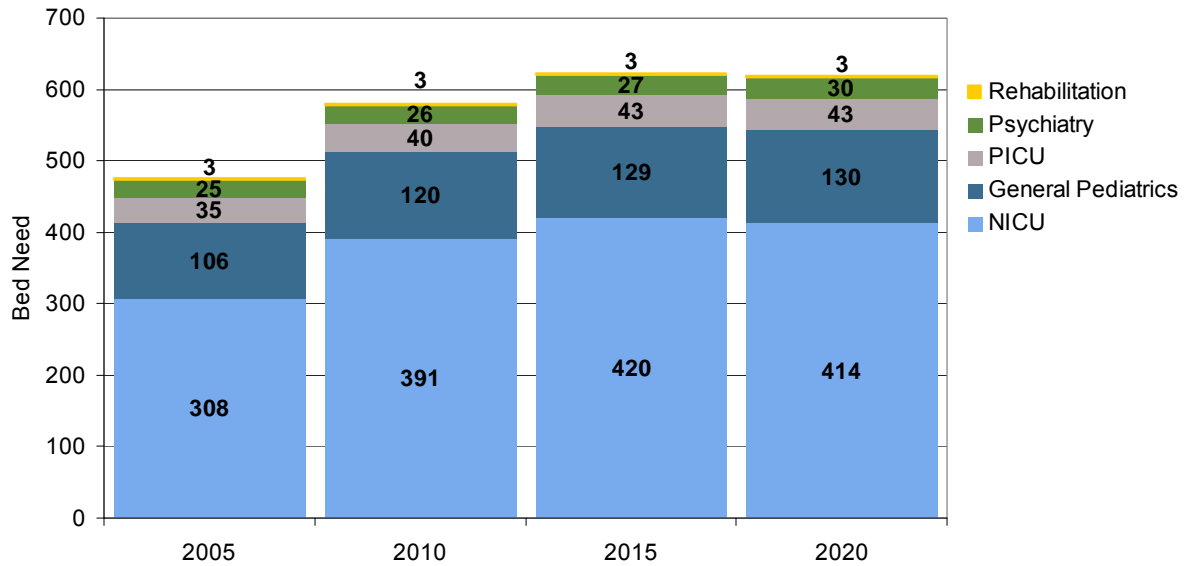
To evaluate future pediatric bed needs, pediatric bed types – NICU, PICU, pediatric general acute, psychiatry and rehabilitation – were reviewed and target occupancy rate assumptions were applied.

Major bed unit assumptions are:

- NICU: ADC is based on patient days for neonatology including in-migration and consideration of admissions in other service lines (e.g. Cardiac Surgery). KSA applied a 70% occupancy rate for NICU beds.
- PICU: ADC is based on patient days for all services including in-migration and excluding Neonatology, Behavioral Health and Rehabilitation service lines. KSA assumed 25% of pediatric patient days require PICU services and applied an 80% occupancy rate for PICU beds.
- Pediatric General Acute: ADC is based on patient days for all services including in-migration and excluding Neonatology, Behavioral Health and Rehabilitation service lines. KSA assumed 75% of pediatric patient days are in general acute beds and applied an 80% occupancy rate.
- Psychiatry and Rehabilitation: ADC is based on the respective service line including in-migration. KSA applied an 85% occupancy rate for these beds.

NICU bed requirements peak in 2015 at 420, then decline with lower birth rates over the next five years. Typically, a bed projection model deducts patient days, and corresponding room requirements, for patients from the San Antonio market but who are treated outside of the market (outmigration). However, THCIC data indicates less than 1% of admissions leave the market to seek care; approximately the equivalent of 2 ADC of NICU patients are served in other markets such as Houston and Austin.

Figure 17: Projected Pediatric Bed Need for San Antonio Market Area, 2005-2020.



Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set

The projected total need for pediatric and PICU beds is 206 beds. Currently on any given day, there are five pediatric patients (excluding NICU) that are cared for in hospitals outside of San Antonio.

Currently the number of pediatric beds among the four major pediatric providers, including Baptist, CHRISTUS, Methodist, and UHS, is 334 (266 pediatric and 68 PICU beds). Projected bed need in 2020 is 206 beds, indicating the current beds will exceed the need through 2020. There is no need for additional pediatric beds in the Market; a free-standing children’s hospital will need to serve as a replacement to or combination of existing beds in the community, rather than as an additional provider.

*Note: The number of market NICU beds at community general hospitals was not available at the time of this analysis and therefore projected bed need was not compared to existing beds to evaluate a surplus or shortage.*

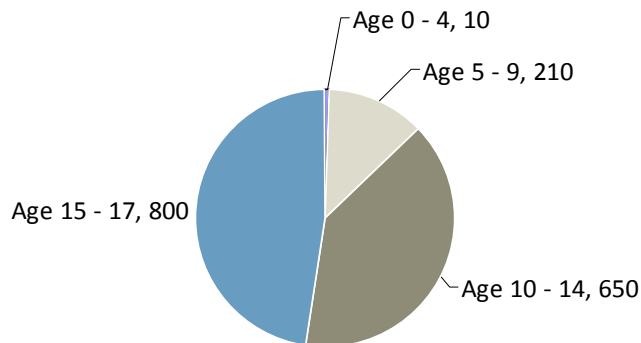
The need for NICU beds will be met both by the pediatric providers and other community hospitals with obstetrical delivery services and related NICU capabilities. To estimate the proportion of future NICU need related to a children’s hospital, KSA divided the total NICU need into the historical 65% provided by the major pediatric providers and the 35% provided by the community general hospitals. This separation results in a need for 269 NICU beds at these four main pediatric providers in 2020. These four hospitals have 203 beds today; an additional 66 beds will be needed by 2020 to maintain the current proportion of care.

## Psychiatry Service Needs

Admissions to the Psychiatry service represent the fifth largest pediatric service in the San Antonio Market Area with a total of 1,200 admissions in 2008; however, psychiatry admissions have steadily declined over the past five years with 250 fewer admissions per year. The ALOS for Psychiatry is higher than the overall ALOS for all services and results in an ADC of 18.4 patients. During the planning period, bed need is projected to increase to 29 rooms by 2020 from 25 beds in 2005. Psychiatry service use is concentrated with 87% of patients between ages 10-17. Market need support the need for a dedicated

Psychiatry unit and further planning consideration will be needed with respect to the appropriate unit configuration and age groupings (e.g. general pediatric psychiatry unit, adolescent psychiatry).

Figure 18: Projected Psychiatric Admissions by Age Cohort, 2020.



Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

## Rehabilitation Service Needs

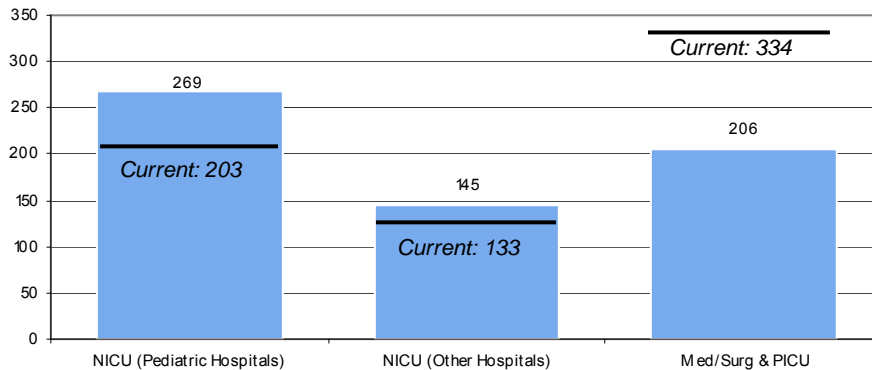
Rehabilitation admissions have been stable over the past five years, with a range between 28 and 37 admissions. Rehabilitation ADC is approximately two per day over the past five years. Projected room need specifically for Rehabilitation admissions is three rooms. Based on the small room need, the market does not require a dedicated rehabilitation unit. We recommend these children receive care on a general acute care unit with necessary access to therapy and treatment spaces to support care protocols.



## KSA Recommendation

KSA recommends that planning for a free-standing children’s hospital in San Antonio include consideration of the market-wide bed need to include 414 NICU beds, 43 PICU beds, and 163 pediatric beds (including psychiatry and rehabilitation beds).

Figure 19: 2020 Projected Bed Need and Current Number of Beds.



Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set. Pediatric Hospitals include Baptist, CHRISTUS, Methodist, and UHS. 133 NICU (Other Hospitals) beds include the following San Antonio Acute Care hospitals: Baptist Medical Center; St. Luke’s Baptist Hospital; Northeast Baptist Hospital; Metropolitan Methodist Hospital; Southwest General Hospital; Methodist Stone Oak Hospital; and Wilford Hall Medical Center. The number of NICU beds is not available for CHRISTUS Santa Rosa - City Centre, CHRISTUS Santa Rosa Hospital New Braunfels, NIX Health Care System, and Southeast Baptist Hospital.

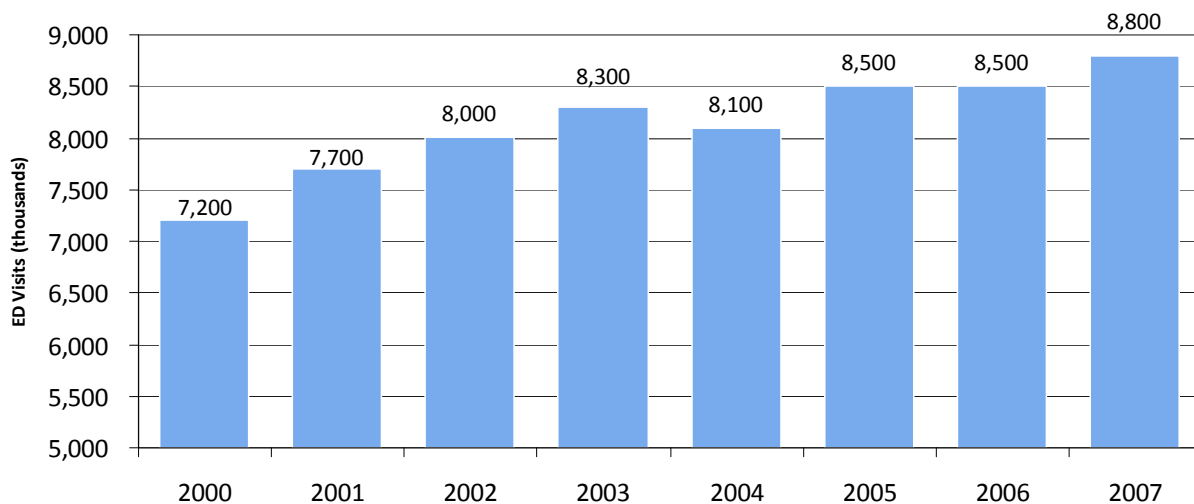
## Introduction

Pediatric emergency services visit data are not reported to the Texas Department of State Health Services or available from other data resources. KSA applied available data for use-rate patterns and distribution of care by age cohorts to estimate current pediatric emergency visits and project future needs in the San Antonio Market Area. To confirm the estimates and projections, KSA applied two methodologies using emergency visit data from the Texas Department of State Health Services (DSHS) and the U.S Department of Health and Human Services.

## Methodology

As the framework for estimating the San Antonio Market Area use patterns, the State of Texas emergency visit data was reviewed. This data indicates the total Texas emergency services use-rates based on visits to Texas hospitals' Emergency Departments (EDs).

Figure 20: Emergency Department Visits to Texas Hospitals, 2000-2007.



Source: Texas Department of State Health Services, Texas Fact Sheet: Acute Care Hospitals, 2008.

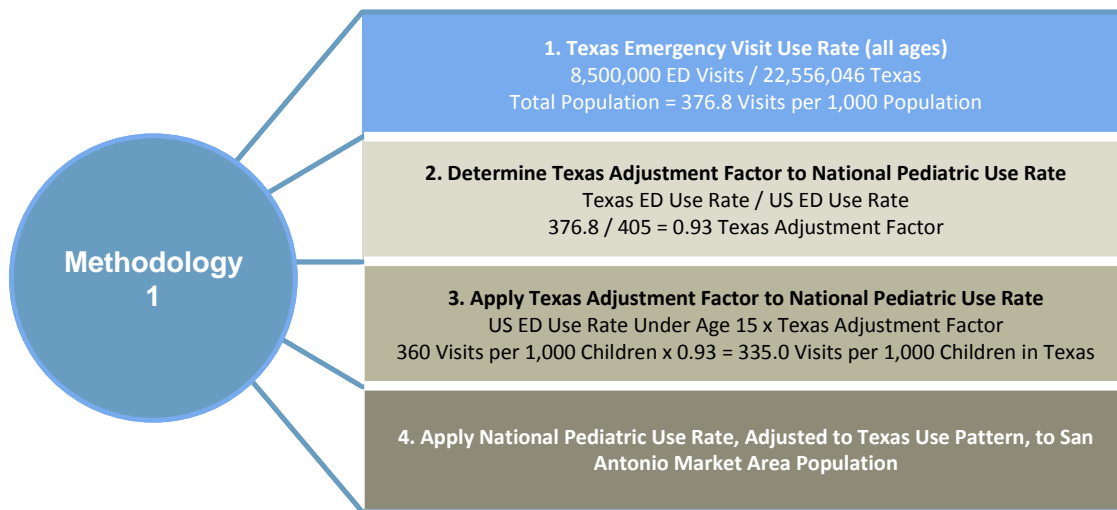
Note: This data includes visits by all ages; further assumptions about children's visit rates are based on this total data.

The methodologies also rely on the National Hospital Ambulatory Medical Care Survey for data elements related to national emergency services use-rates for children, published annually by the Centers for Disease Control (CDC). This survey provides data for children ages 0-15, therefore, the methodologies applied match this age range to calculate San Antonio Market Area ED use-rates; it is assumed that children ages 16 and 17 have the same use-rate as the children ages 0-15 for purposes of estimating the total San Antonio Market Area needs.

### **Methodology 1: National Use-Rates Adjusted to Texas Use Patterns**

The first methodology projection applies national emergency services use-rates, adjusted for Texas use patterns and pediatric population.

Figure 21: Emergency Visit Methodology 1.

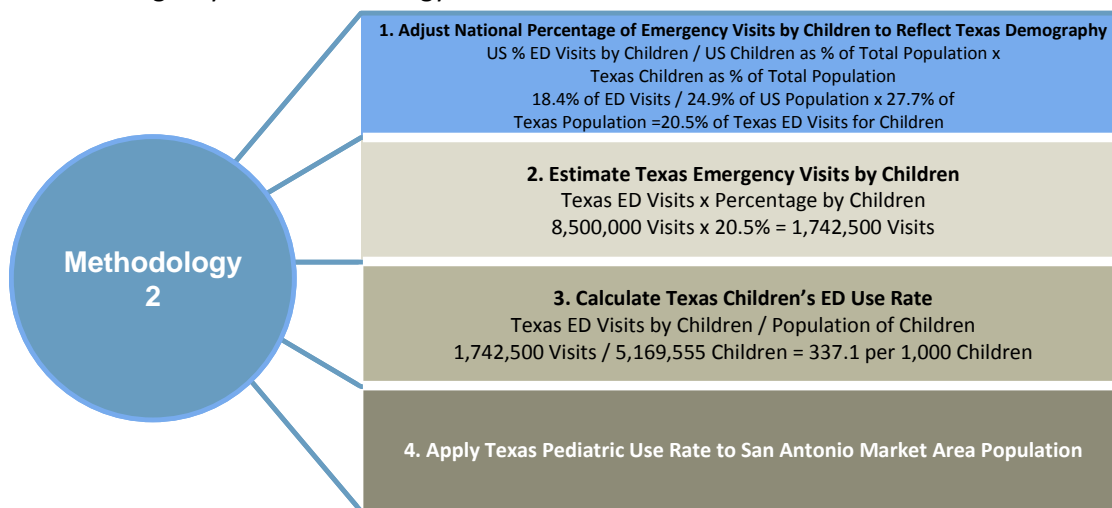


Sources: Texas State Demographics Data Center, Office of State Demographer; Texas Department of State Health Services, National Hospital Ambulatory Medical Care Survey: 2006 Emergency Department Summary, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention National Center for Health Statistics, August, 2008

## Methodology 2: Texas Use-Rates Adjusted to Local Demography

The second methodology estimates pediatric ED use-rate based on the total ED visits and proportion of visits made by children.

Figure 22: Emergency Visit Methodology 1.



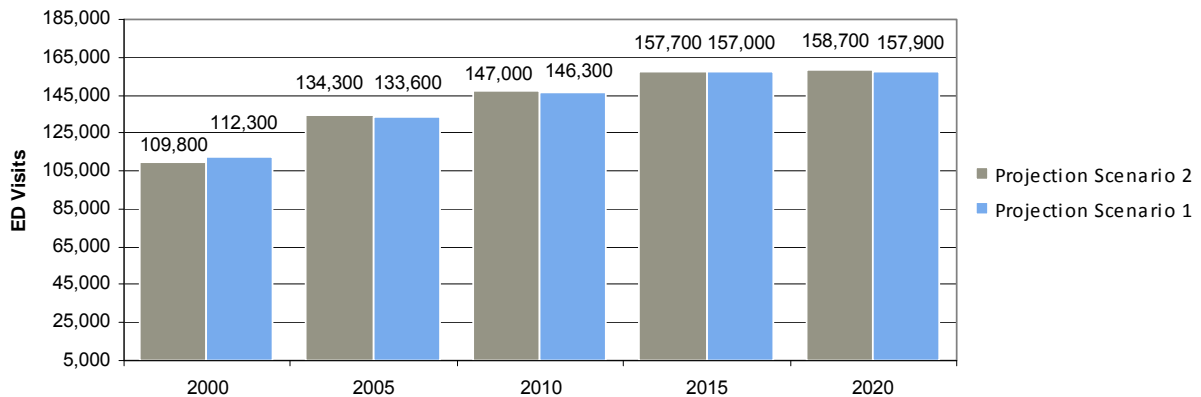
Sources: Texas State Demographics Data Center, Office of State Demographer; Texas Department of State Health Services, National Hospital Ambulatory Medical Care Survey: 2006 Emergency Department Summary, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention National Center for Health Statistics, August, 2008

## Pediatric Emergency Visits

Today, the approximate size of the San Antonio pediatric ED market is 140,000 visits per year. These projections indicate pediatric emergency visits are expected to grow by 8% between 2010 and 2020, an

increase of approximately 11,700 visits per year. The majority of this growth occurs by 2015; the growth rate after 2015 declines related to the decline in projected birth rates.

Figure 23: Pediatric Emergency Department Visits for San Antonio Market Area, 2000-2020.



Sources: Texas State Demographics Data Center, Office of State Demographer; Texas Department of State Health Services, National Hospital Ambulatory Medical Care Survey: 2006 Emergency Department Summary, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention National Center for Health Statistics, August, 2008

Each of the methodologies assumes a constant use-rate; changes to the factors influencing use-rate will result in variation from projected ED volumes. According to the US Department of Health and Human Services, the use-rate as increased from 269.8 to 302.5 per thousand in the population (under 15) between 2000 and 2005. Despite the trend of rising ED use-rates, a number of factors suggest that use-rates will not continue to rise, and in fact may decline over the next ten years. In 2006, the age group with the highest annual per capita ED visit rate was infants under 12 months of age, who made 845 visits per 1000 infants<sup>5</sup>. Assuming use-rates for this age group remain constant, a decrease in births, expected in the second half of the next decade, will result in an overall net decrease in use-rates among the entire pediatric population. Furthermore, improved access to preventative care, through expanded pediatric specialist access and creation of a medical home for children with chronic needs, should decrease the number of ED visits, and hence result in decrease overall pediatric ED use-rate.

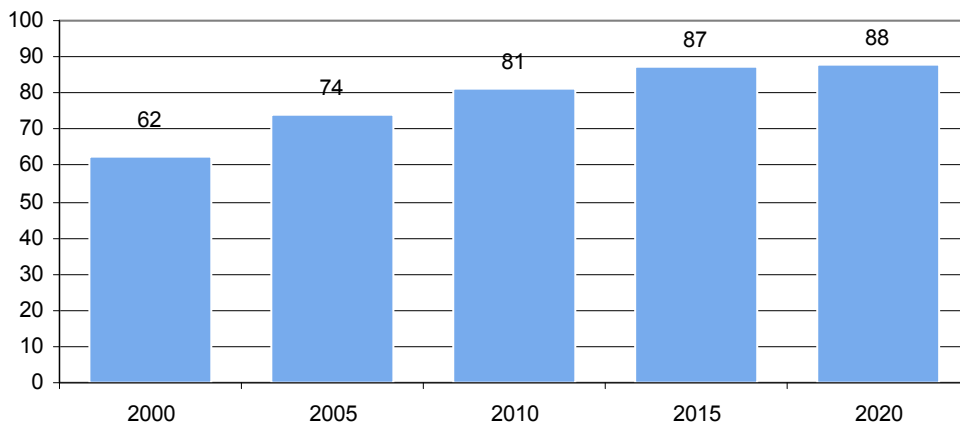
Among the current pediatric providers, only CHRISTUS has a dedicated pediatric emergency room. It receives approximately 62,000 visits per year – approximately 45% of all visits for children. Methodist has a pediatric emergency entrance and pediatric emergency physicians in a shared department with adult patients; it receives approximately 58,000 visits per year (40% of all visits). Baptist has recently developed a pediatric emergency service and volumes for this program are not available publicly. UHS provides pediatric emergency and trauma service within the main emergency department with pediatric emergency physicians.

<sup>5</sup> National Hospital Ambulatory Medical Care Survey: 2006 Emergency Department Summary, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention National Center for Health Statistics, 2008.

## Pediatric Emergency Treatment Bays

Emergency Department treatment room requirements are calculated based on an assumed ED treatment bay utilization rate of 1800 visits per room per year. Because both visit projection scenarios yield similar results, required treatment room need under both scenarios is projected to be equal through at least 2020.

Figure 24: Projected Emergency Department Treatment Room Need for the San Antonio Market Area, 2000-2020.



Sources: Texas State Demographics Data Center, Office of State Demographer; Texas Department of State Health Services, National Hospital Ambulatory Medical Care Survey: 2006 Emergency Department Summary, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention National Center for Health Statistics, August, 2008

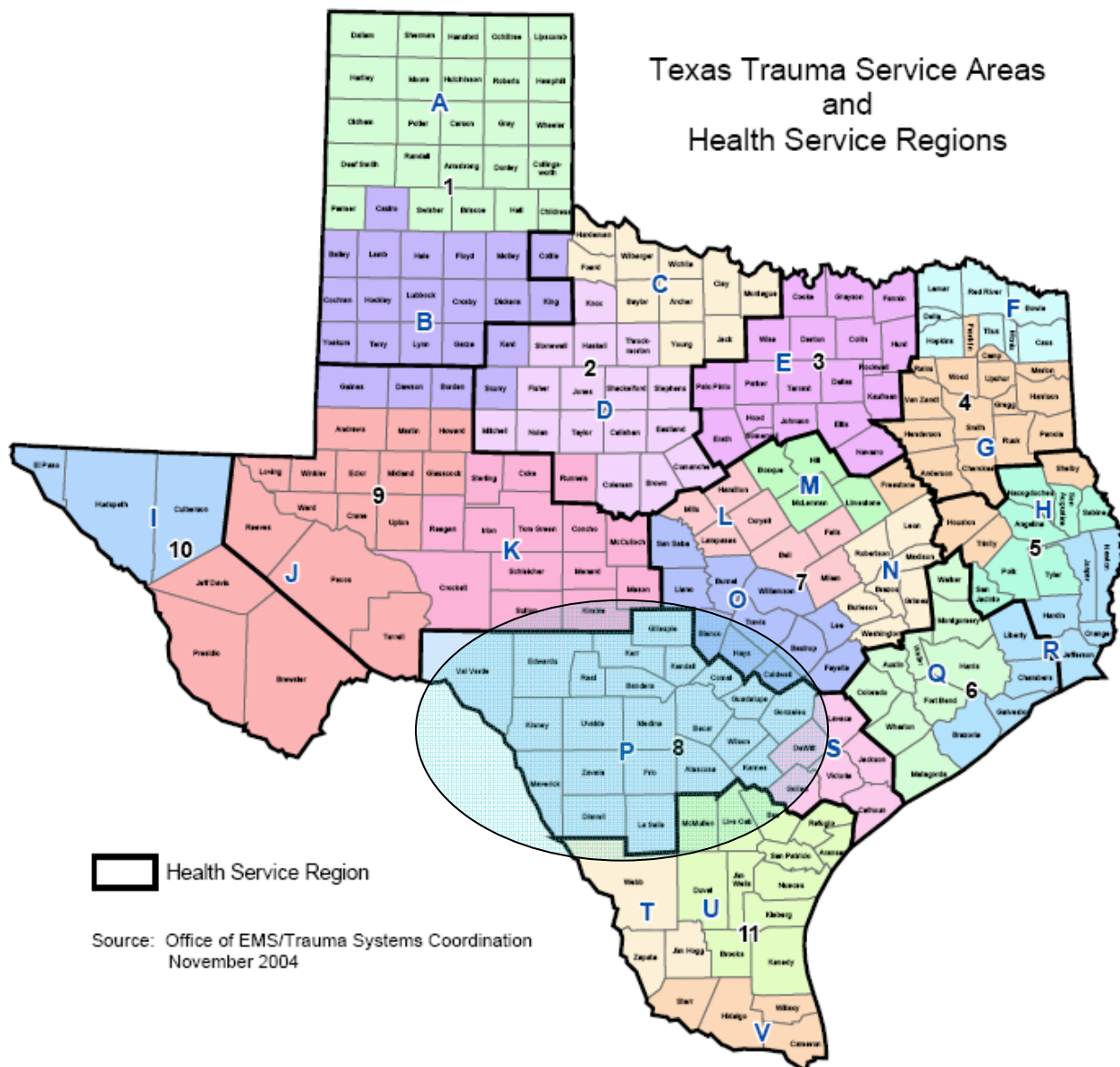
## KSA Recommendation

KSA recommends that planning for a free-standing children’s hospital in San Antonio include 88 emergency treatment bays as the total need in the market.

## Pediatric Trauma and Burn Admissions

Admissions for pediatric Trauma and Burn cases originate from the 22 counties within Trauma Region P as well as from a broader geography. The map in Figure 25 includes the geographic area covered by Trauma Region P as well as other Texas Trauma Regions.

Figure 25: Texas Trauma Service Areas.



Trauma cases in Trauma Region P total approximately 1,500 cases per year with the vast majority receiving care at UHS; 49% of these cases are transferred to UHS from another hospital’s emergency department – virtually all of them from outside Bexar County and the San Antonio area.

Table 20: Pediatric Trauma Cases from Trauma Region P, 2006-2008.

	2006	2007	2008
UHS Pediatric Trauma Cases	1,046	1,172	1,210
Percentage Transfer In	44%	45%	49%
Other Hospital Trauma Cases	244	278	290
<b>Estimate of Total Trauma Region P Cases</b>	<b>1,290</b>	<b>1,450</b>	<b>1,500</b>

Source: TSA-P Ad Hoc Reports provided by UHS, 2006-2008.

The vast majority of Trauma cases – estimated at over 90% - are ultimately admitted to the hospital for inpatient care. As the patient may receive care in a wide array of services – for example, general surgery, cardiac surgery, neurology, and orthopedics – trauma admissions are difficult to identify within the THCIC data set. For those cases that are coded within the Trauma and Burn services, approximately one-fourth of all trauma cases, UHS is the predominant provider of pediatric inpatient trauma care.

Table 21. Pediatric Trauma and Burn Service Line Admissions from Trauma Region P, 2004-2008.

	2004	2005	2006	2007	2008	2008 Share
<b>Region P Trauma Admissions</b>						
University Health System	142	178	185	232	210	70%
CHRISTUS Santa Rosa Children's Hospital	45	31	30	35	38	13%
Methodist Hospital	17	33	18	29	31	10%
All Others	45	26	37	44	23	8%
<b>Total</b>	<b>249</b>	<b>268</b>	<b>270</b>	<b>340</b>	<b>302</b>	<b>100%</b>

Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set

UHS is the main provider of pediatric trauma services providing care for 70% of all pediatric trauma and burn cases in Trauma Region P; three-quarters of all pediatric trauma cases at UHS are from Trauma Region P.

Table 22: UHS Pediatric Trauma Cases by Texas Trauma Region, 2008.

	2008	Percentage
<b>UHS Pediatric Trauma Cases by Region</b>		
Region P	799	77%
Region S	18	2%
Region T	53	5%
All Others	166	16%
<b>Total</b>	<b>1,036</b>	<b>100%</b>

Source: TSA-P Ad Hoc Reports provided by UHS, 2006-2008.

Pediatric trauma care serves the most severely injured and ill children and thus, relies on the critical care expertise and pediatric specialists available. Key physicians – pediatric emergency medicine physicians, pediatric surgeons, pediatric anesthesiologists, pediatric radiologists – and key hospital resources – pediatric pharmacy, pediatric operating rooms and pediatric equipment – are necessary to provide pediatric trauma care. Planning for a free-standing children’s hospital should include the requirements to be designated as the pediatric trauma center.

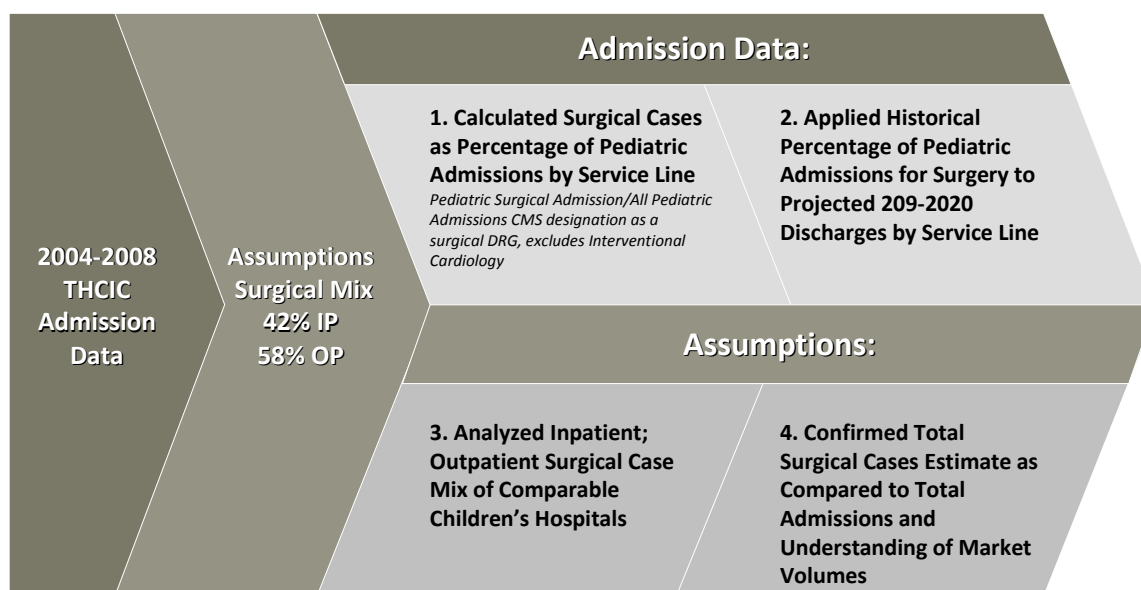
## Introduction

This section outlines the current estimate of pediatric surgical case volumes in the San Antonio Market Area. As there is no data resource that provides accurate data for this service, the total surgical case volumes were estimated based on inpatient data, classification of DRG's as surgical/procedural admissions, and a relationship between inpatient and outpatient surgery based on comparative data.

## Methodology

To estimate the current and projected surgical case volumes, we applied a set of assumptions to the inpatient data set:

Figure 26: Surgical Estimate and Projection Methodology.



## Pediatric Surgical Volumes

### *Pediatric Inpatient Surgical Cases*

Pediatric surgical volumes in the San Antonio Market area, and including in-migration, are approximately 3,200 inpatient cases per year. Five service lines account for over 85% of all pediatric inpatient surgical cases: General Surgery, Orthopedic Surgery & Spine Surgery, Neurosurgery, ENT, and Cardiovascular & Vascular Surgery. The volume of cases has been increasing by approximately 1% per year over the past five years; surgical cases have not increased as fast as the total pediatric admissions and therefore the mix of surgical to medical cases has declined slightly. In 2008, surgical cases accounted for 14% of all pediatric admissions.



Table 23: Pediatric Inpatient Surgical Admissions by Service Line, 2004-2008.

	2004	2005	2006	2007	2008	CAGR
General Surgery	1,402	1,356	1,441	1,472	1,382	-0.4%
Orthopedic Surgery & Spine Surgery	584	544	678	686	648	3%
Neurosurgery	242	262	274	291	281	4%
ENT	172	182	206	271	280	13%
Cardiovascular & Vascular Surgery	221	227	249	229	249	3%
Urology	129	102	100	106	120	-2%
Thoracic Surgery	76	76	80	94	107	9%
Transplant	50	53	52	71	50	0%
Ophthalmology	26	22	34	27	29	3%
Plastic Surgery	92	87	70	25	26	-27%
Burn & Trauma	10	11	18	19	19	17%
Oncology - Surgical	20	21	12	15	12	-12%
<b>Total</b>	<b>3,024</b>	<b>2,943</b>	<b>3,214</b>	<b>3,306</b>	<b>3,203</b>	<b>1%</b>

Source: THIC Inpatient data set, 2004-2008. Excludes Normal Newborns and admissions to hospitals outside of Texas.

Note: Neonatal surgical cases are included as specialty admissions in the respective service line.

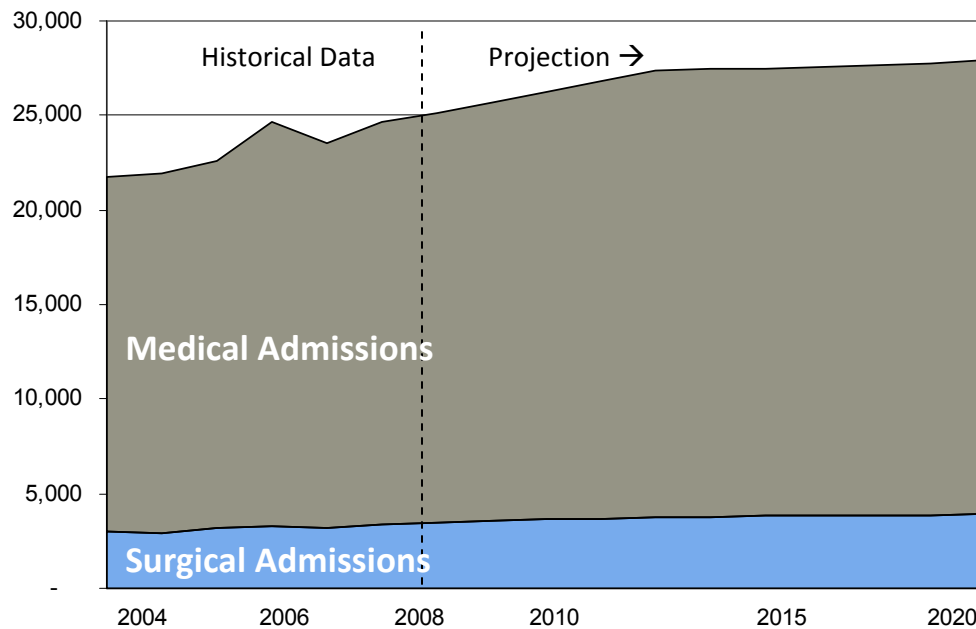
CAGR is the Compound Annual Growth Rate

## Future Inpatient Surgical Cases

In the projection period of 2009-2020, KSA has assumed that the proportion of inpatient surgical cases by service line is maintained as similar levels to the historical patterns. The inpatient admission projection (as outlined in previous section) forms the foundation from which the surgical cases are projected; the overall proportion of surgical admissions increases slightly due to the growth of service lines.

By 2020, the San Antonio Market Area and in-migration will include approximately 3,900 inpatient surgical cases. The major specialties will remain the same as today with General Surgery accounting for approximately 45% of all pediatric surgeries.

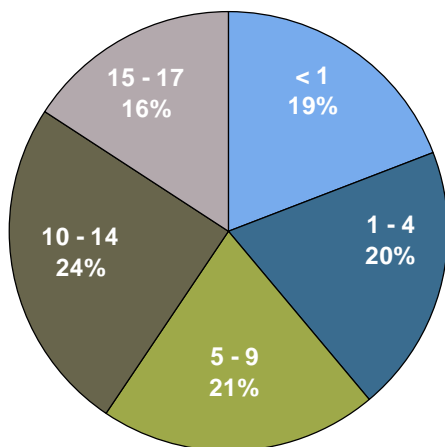
Figure 27: Pediatric Admissions, 2004-2020.



Source: THIC Inpatient data set, 2004-2008. Excludes Normal Newborns and admissions to hospitals outside of Texas.

Younger children under the age of 10 receive 60% of all surgeries. The majority of children under age 1 that require surgery are identified at birth and may receive post-surgical care in the NICU. Older children receive surgical intervention as developmental disabilities or conditions are identified and receive post-surgical care in the PICU and general pediatric units.

Figure 28: Inpatient Surgical Cases by Age Cohort, 2008.



Source: THIC Inpatient data set, 2008. Excludes Normal Newborns and admissions to hospitals outside of Texas.

## *Pediatric Outpatient Surgical Cases*

As no outpatient surgical volume resource exists, KSA estimated the volume based on data and experience from similar children’s hospital settings. Pediatric outpatient surgical case volumes located at children’s hospitals are driven mainly either the pediatric subspecialty surgeon or the prevalence of advanced pediatric surgical capabilities such as pediatric anesthesiology or pediatric pathology. As such, estimation of the total pediatric market size and application of assumptions about what market share a children’s hospital may serve (versus other outpatient surgery centers) is of minimal guidance in evaluating the need for a children’s hospital to provide ambulatory surgery.

For the nine comparable children’s hospitals with surgical inpatient and outpatient cases, the range of the ratio of outpatient cases: Inpatient cases are 0.7-2.5; six of the nine have values between 1.2 and 1.8 and the median is 1.4. The assumption applied for pediatric surgical services in San Antonio is the median ratio of 1.4 outpatient cases per inpatient case.

Table 24: Comparable Children’s Hospitals: Inpatient and Outpatient Surgical Ratio.

	Year	Inpatient	Outpatient	Ratio O/I
Children's A: Midwest Academic	2006	1,781	2,095	1.2
Children's B: East Regional Community	2007	3,246	8,194	2.5
Children's C: East Community	2006	1,997	3,532	1.8
Children's Hospital of Central California	2008	3,963	5,438	1.4
Children's Hospital of Los Angeles, CA	2008	6,259	8,676	1.4
Children's Hospital of Orange County, CA	2008	3,500	4,805	1.4
Miller Children's Hospital, Long Beach, CA	2008	5,408	3,668	0.7
Oakland Children's Hospital, CA	2008	3,673	5,321	1.4
Rady Children's Hospital, San Diego, CA	2008	6,295	14,159	2.2

Source: KSA data from comparable children’s hospitals; State of California Office of Statewide Health Planning Data, 2008.

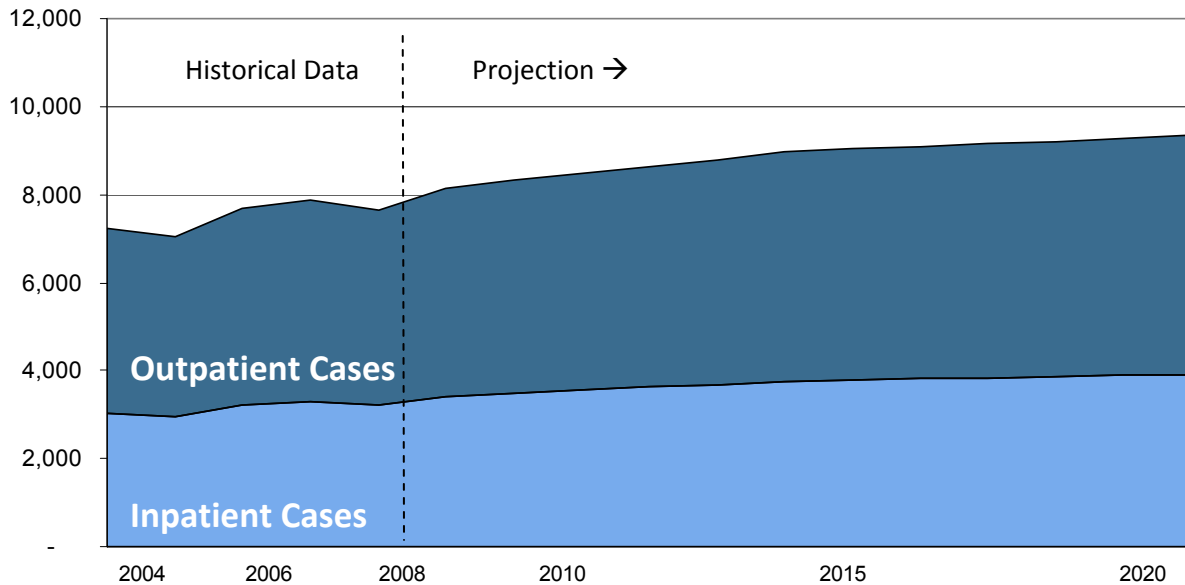
Applying this ratio, to the inpatient surgical cases, the estimated current children’s hospital outpatient surgical cases are approximately 4,400 cases; over the past five years, outpatient case estimates range between 4,000 and 4,600 cases per year.

Future projections of the outpatient cases indicate that by 2020, volumes will increase by approximately 20-25% and add 1,000 incremental new cases. This increase does not assume a change in practice patterns such as an increasing proportion of care provided in an ambulatory setting. Based on KSA’s experience in similar children’s markets, the shift to ambulatory settings has typically increased the children’s hospital’s outpatient surgical volumes rapidly as these children require more complex ambulatory care than is available at community ambulatory surgery centers. If this were to occur in San Antonio, the inpatient surgical case projection (and related patient days) would be reduced by a corresponding amount.

## *Total Pediatric Surgical Cases*

The current surgical volume appropriate to a children’s hospital in San Antonio is estimated at 7,600 cases in 2008 with a range between 7,000 and 7,900 during the past five years. During the projection period, total cases will increase by 20-25% and add an incremental 1,700 new cases. Total surgical cases in 2020 are estimated at 9,300-9,400 cases annually.

Figure 29: Pediatric Surgical Cases, 2004-2020.



Source: THIC Inpatient data set, 2004-2008. Excludes Normal Newborns and admissions to hospitals outside of Texas.

## Pediatric Operating Rooms

Based on the estimated pediatric surgical case volumes, the San Antonio market area will need approximately 12-16 operating rooms to serve pediatric cases by 2020. This estimate applies an assumption that pediatric cases, with high acuity, complexity and larger surgical teams, will utilize operating rooms at lower rates than adult surgical departments. KSA has applied an assumption range of 600-800 pediatric cases per operating room per year in developing the room need assessment.

Table 25: Pediatric Operating Room Need, 2008-2020.

	2008	2010	2015	2020
<b>Total Surgical Cases</b>	<b>7,640</b>	<b>8,310</b>	<b>9,030</b>	<b>9,350</b>
<b>Assumed Cases per Operating Room</b>				
Lower Utilization		600 Cases per Room Per Year		
Higher Utilization		800 Cases per Room Per Year		
<b>Number of Operating Rooms Required</b>				
<b>Lower Utilization</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
<b>Higher Utilization</b>	<b>10</b>	<b>10</b>	<b>11</b>	<b>12</b>

As 16% of current pediatric surgical cases are for children ages 15-17, it is reasonable to expect some portion of these cases will occur at general acute care hospitals rather than at a children’s hospital; these volumes will decrease the need for pediatric operating rooms at a children’s hospital up to 3 rooms.

Surgical care for children is provided today predominantly at CHRISTUS, Methodist and UHS; Baptist has a very small surgical case volume for children. Inpatient surgery cases, the only data that are publicly reported, indicate that CHRISTUS had 1,248 cases in 2008 (38% of all pediatric inpatient surgery).

Methodist had 1,105 inpatient cases - 34% of all pediatric inpatient surgery. UHS provided a total of 421 inpatient surgeries (13%) and Baptist 274 surgeries (8%) in 2008.

## **KSA Recommendation**

The total operating room need is 12-16 rooms to serve pediatric cases in a children's hospital. KSA recommends that planning for a free-standing children's hospital in San Antonio include 10-13 operating rooms as the total children's hospital operating room need in the market. This range assumes 2-3 rooms of cases are for children ages 15-17 that will continue to receive care in general acute care hospitals.

Table 26: Pediatric Outmigration from the San Antonio Market, 2004-2008.

Service Line	Hospital	2004	2005	2006	2007	2008
Burns	Texas Children's Hospitals	1	1			
	All Other Texas Hospitals	4		1		
Cardiovascular Surg	Texas Children's Hospitals	3	3	8	8	6
	All Other Texas Hospitals	1			1	
ENT	Texas Children's Hospitals	2	5		2	10
	All Other Texas Hospitals	11	17	5	4	4
General Medicine	Texas Children's Hospitals	16	25	21	38	34
	All Other Texas Hospitals	126	109	44	46	22
General Surgery	Texas Children's Hospitals	3	5	6	2	10
	All Other Texas Hospitals	35	21	8	14	8
GI Svcs	Texas Children's Hospitals	10	1	6	16	26
	All Other Texas Hospitals	46	41	12	9	8
Medical Cardiology	Texas Children's Hospitals	3	3	1	2	10
	All Other Texas Hospitals		3		2	
Neonatology	Texas Children's Hospitals	15	6	8	1	7
	All Other Texas Hospitals	80	108	80	82	81
Neurology	Texas Children's Hospitals	18	12	16	18	24
	All Other Texas Hospitals	14	2	1	6	4
Neurosurgery	Texas Children's Hospitals	5	5	5	12	15
	All Other Texas Hospitals	1	1			4
Oncology - Medical	Texas Children's Hospitals	1	9	5	4	3
	All Other Texas Hospitals					
Oncology - Surgical	Texas Children's Hospitals				3	
	All Other Texas Hospitals					
Ophthalmology	Texas Children's Hospitals	7		4	4	2
	All Other Texas Hospitals				1	
Orthopedic Surgery	Texas Children's Hospitals	6	8	13	12	7
	All Other Texas Hospitals	17	9	10	9	8
Other / Ungroupable	Texas Children's Hospitals	1	1			
	All Other Texas Hospitals	1	2	4		
Plastic Surgery	Texas Children's Hospitals					
	All Other Texas Hospitals	1	1			
Psychiatry	Texas Children's Hospitals		1			
	All Other Texas Hospitals	1		2	5	4
Rehabilitation	Texas Children's Hospitals					1
	All Other Texas Hospitals					
Thoracic Surgery	Texas Children's Hospitals		2	2	1	1
	All Other Texas Hospitals			1		
Transplant	Texas Children's Hospitals	1		1	1	6
	All Other Texas Hospitals					
Trauma	Texas Children's Hospitals	3		2	1	2
	All Other Texas Hospitals	3	4	3	4	4
Urology	Texas Children's Hospitals	2	4	6	7	5
	All Other Texas Hospitals	9		1		
<b>Grand Total</b>		<b>447</b>	<b>409</b>	<b>276</b>	<b>315</b>	<b>316</b>

Source: Data provided by UHS Finance Department from Texas Healthcare Information Collection Inpatient Data set.

Note: Texas Children's Hospitals include Dell Children's Medical Center of Central Texas, Driscoll Children's Hospital, Memorial Hermann - Texas Medical Center, and Texas Children's Hospital

Table 27: Pediatric Services at Major Pediatric Providers.

	Baptist	CHRISTUS	Methodist	UHS
KEY: ■ Service available per public website ? Assumed service is provided based on scale and scope of known programs and volumes				
<b>Hospital Based Pediatric Specialties</b>				
Anesthesia	■	■	■	
Emergency Medicine	■	■	■	
Pediatric Hospitalist	■	?	■	
Pediatric Intensivists	■	■	■	?
Neonatology	■	■	■	■
Pathology		■		
Pharmacy	■	?	?	■
Radiology	■	■	■	
Trauma Service Designation			Level III	Level I
<b>Pediatric Surgical Specialties</b>				
Cardiac Surgery		■	■	
Dentistry		■	■	
General Surgery	■	■	■	■
Neurosurgery		■	■	
Ophthalmology	■	■	■	■
Organ Transplant		■		■
Orthopedic Surgery	■	■	■	■
Otolaryngology	■	■	■	■
Plastic Surgery		■	■	■
Thoracic Surgery		■	■	
Urology	■	■	■	■
Vascular Surgery		■		

[ Table continued on following page ]

	Baptist	CHRISTUS	Methodist	UHS
KEY: ■ Service available per public website				
? Assumed service is provided based on scale and scope of known programs and volumes				
Pediatric Medical Specialties				
Allergy & Immunology		■	■	■
Behavioral & Developmental		■	■	■
Cardiology	■	■	■	■
Dermatology		■	■	■
Endocrinology	■	■	■	■
Gastroenterology	■	■	■	■
Genetics		■		■
Hematology/Oncology	■	■	■	■
Infectious Disease	■	■	■	■
Nephrology	■	■	■	■
Neurology	■	■	■	■
Pumonology	■	■	■	■
Rehabilitation		■	■	
Rheumatology		■		
Sleep Medicine	■	■		
Sports Medicine			■	

Source: Hospital websites and publicly available information.