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Hospital Industry Drivers and
the Knoxville Hospital Industry in the year 2020

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Current State of Knoxville's Hospital Industry

There are currently four competing hospital systems in Knoxville, though that may not be the case for long. The four systems are Covenant Health, Baptist Health System, St. Mary's Health System, and University Health System. All four hospital systems are not-for-profit and operate a combined 13 acute care hospitals in the Knoxville area, with another hospital currently under construction. Acute care hospitals are hospitals that offer healthcare services for immediate and/or severe illnesses, injuries, trauma, and surgery recovery (Lavey).

Covenant Health is a private healthcare system that operates five acute care hospitals in the Knoxville area: Fort Sanders Regional Medical Center, Fort Loudoun Medical Center, Fort Sanders Sevier Medical Center, Methodist Medical Center of Oak Ridge, and Parkwest Medical Center. Covenant Health also operates several other healthcare facilities including cancer care centers, breast centers, behavioral health centers, rehabilitation centers, and home health services, among other services. Covenant Health recently received approval to build a \$78.7 million dollar hospital to replace the Fort Sanders Sevier Medical Center in Sevier County (Fort Sanders Sevier). Another project recently undertaken by Covenant Health was a \$40 million dollar renovation to the Methodist Medical Center of Oak Ridge (Harrington, "A Major").

Baptist Health System is another private healthcare system that operates four acute care hospitals in the Knoxville area: Baptist Hospital of East Tennessee, Baptist Hospital West, Baptist Hospital for Women, and Baptist Hospital of Cocke County. The health system also operates six senior health centers providing care for patients 50 years of age and older (Baptist, "About"). Baptist Health has \$217 million in debt and has been

seeking a partnership with another health system to help alleviate its financial problems. Baptist Health nearly entered into a partnership with Triad Hospitals Inc., a Texas-based for-profit hospital system. However, Baptist Health is a not-for-profit health care system, as mentioned above, and wishes to stay so. Negotiations broke down between Baptist and Triad in early November 2006, leaving Baptist on the hunt for a partner hospital system. In May 2006, the three other hospital systems in Knoxville (Covenant, St. Mary's, and University) made an unsolicited offer to buy Baptist's facilities for \$275 million (Harrington, "Baptist").

St. Mary's Health System is a subsidiary of Catholic Healthcare Partners, a private not-for-profit healthcare system based in Cincinnati, Ohio. St. Mary's currently operates three acute care hospitals in the Knoxville area: St. Mary's Medical Center, St. Mary's Jefferson Memorial Hospital, and St. Mary's Medical Center of Campbell County. The health system is currently constructing St. Mary's Medical Center North, a \$67 million acute care hospital in North Knoxville that is scheduled to open in fall 2007 (St. Mary's, "St. Mary's"). St. Mary's also operates a cancer center, a heart center, women's services, and orthopedic services, among other services.

University Health System is a private health care system affiliated with the University of Tennessee. The health care system operates one acute care hospital, the University of Tennessee Memorial Hospital. It also operates the University of Tennessee Graduate School of Medicine (University).

Hospital Industry Drivers

The hospital industry is changing nationwide. The "Golden Age" of the industry was in the past when there were strong relationships between physicians and hospitals,

hospital staff was considered family, and the industry was fueled by excessive national healthcare spending. The ending of the “Golden Age” slowly came about as healthcare came to be seen as managed care, national for-profit hospital systems were established, hospital and physician costs skyrocketed while reimbursement plummeted, and healthcare providers struggled to maintain financial margins. That is the state of the hospital industry today. According to Tony Spezia, President and Chief Executive Officer of Covenant Health, the average operating margin of all Knoxville hospitals is effectively \$0 (Spezia). The hospital industry in Knoxville and nationwide is affected by various drivers, trends which, in essence, direct the evolution of the industry. Following is a discussion of some of these drivers.

HOSPITAL COMPETITION

Competition is generally considered a beneficial aspect of business. It encourages businesses to constantly improve and offer better products and/or services. It also hinders businesses from charging exorbitant prices for those products and/or services. The hospital industry is not exempt from the effects of competition. Competition prompts hospitals to use better technology, offer more services, and charge lower prices for patients. The lower prices are indeed a benefit to the communities in which the competing hospitals operate. Residents of Knoxville and the surrounding area enjoy these lower prices due to the competition between the four hospital systems. However, lower prices mean lower revenue for the hospitals and difficulty in meeting operating margins. Competition also introduces two other problems to the hospital industry: over-saturation and differentiation.

Over-saturation occurs when there are too many hospitals operating in an area and/or when the hospitals in an area have more capacity (i.e. hospital beds) than the area requires. Knoxville is currently suffering from over-saturation on both fronts. Between the four hospital systems, there are nine hospitals in Knox County alone. The four health systems' remaining hospitals are in neighboring counties. Between 2000 and 2007, \$500 million has been spent in Knoxville on new facilities (Spezia). St. Mary's Health System is investing \$100 million for renovation of its St. Mary's North facilities, which includes the construction of its new acute care hospital. Its total capacity among its three current hospitals is just over 600 beds (St. Mary's, "St. Mary's"). The new hospital in North Knoxville will initially have 72 beds and is being built to eventually accommodate 300 beds. While St. Mary's is increasing its capacity, it will remove some of its beds at its flagship hospital, St. Mary's Medical Center, with apparent intentions to transition its main operations to the new hospital in North Knoxville (Harrington, "A Major"). In 2002, Covenant Health initiated a \$250 million project to update its facilities. Included in this project was a \$100 million six-story tower addition in March 2005 to Parkwest Medical Center, which included the addition of 214 beds. Covenant's total capacity among its five acute care hospitals is by far the largest of the four hospital systems at more than 1,200 beds (Covenant). In 2003, Baptist Health System invested over \$60 million in two new facilities in West Knoxville in the Turkey Creek development area. The current capacity of Baptist's four acute care hospitals is about 500 beds (Baptist Health). University Health System's University of Tennessee Memorial Hospital has a capacity of just under 600 beds (University). All added together, the four hospital systems in the Knoxville area have a capacity of about 2,900 beds.

The other problem introduced by competition, differentiation, involves the variety of services each hospital offers and the differences between each hospital's offerings. Every hospital wants to offer the best service it can at the most affordable price. To accomplish this goal, many hospitals build facilities to serve patients with special needs. When multiple hospitals build these facilities, the result is often duplication of services with overcapacity and lower operating margins due to competition. Such duplication of services affects the Knoxville area. Covenant Health, St. Mary's Health System, and Baptist Health System all have cancer centers, rehabilitation centers, and home care services. St. Mary's and Baptist both have large heart centers and sleep disorder centers. St. Mary's and Covenant both offer numerous behavioral health services.

AMBULATORY SURGERY CENTERS

Ambulatory care, also known as outpatient care, is health care provided without the patient being admitted (i.e. no overnight stay) (Lavey). Many hospitals have outpatient surgery departments within their facilities. However, starting in the 1980s, free-standing ambulatory surgery centers (ASCs) became very popular as the Medicare program began paying for surgeries performed in ASCs. Patients and physicians prefer ASCs for certain surgical procedures because they are more cost-effective and much more convenient than traditional hospital outpatient surgery departments. The convenience of ASCs is in their convenient locations, easier scheduling, and shorter admitting and discharging procedures. The problem with ASCs is that they attract high-revenue surgical procedures away from hospitals. At least seven million surgeries are performed each year in ASCs, with increases expected. This poses a potential threat to

hospital systems everywhere as they are left with low-revenue procedures to provide operating revenue (Jarrard).

However, some hospitals are viewing ASCs as opportunities instead of threats. By investing in their own ASCs, they can retain the high-revenue procedures while offering more convenient service with more cost-efficiency. These “hospital-owned” ASCs are usually partnerships with physicians and sometimes with companies specializing in the management of ASCs. Among the four hospital systems in Knoxville, St. Mary’s and Covenant operate multi-specialty ASCs. St. Mary’s ASC is a partnership with physicians while Covenant’s ASC is a joint-venture partnership with Fortress Corporation, which acts as the managing general partner (Fort Sanders West).

TECHNOLOGY

One of the most dynamic drivers in the hospital industry is technology. During the 20th century, technology advanced by leaps and bounds in the areas of pharmaceuticals and medical instrumentation. While this innovation will undoubtedly continue, other technological innovations are changing the hospital industry. The rise of high-speed internet communication has introduced a new opportunity for hospitals: health information can be sent thousands of miles within seconds. This allows physicians to get valuable input from medical experts across the country and the world. It also allows hospitals to get standard information, such as radiological imaging interpretation, at any hour of the day – during the night in the US, radiologists in other countries can interpret radiological images during their daylight hours.

Another development that is significantly affecting the hospital industry is the introduction of information technology (IT). IT applications in hospitals include

electronic health records, electronic imaging file systems, and computerized medication alert systems, among other applications. These applications would allow physicians to improve the quality, safety, and efficiency of the care they provide to patients. IT would also allow hospitals to increase the speed of revenue collection through electronic billing. Patients would appreciate IT systems as their health information could be easily sent from one hospital to another in the case of residential relocation or travel emergencies. One of the problems with IT implementation in hospitals is the overwhelming expense of IT systems. Larger hospitals and hospital systems may be able to afford IT systems, but smaller rural hospitals will likely not be able to afford the technology (Lavey). Another problem with IT systems is compatibility among different systems. If hospitals use incompatible IT systems, the advantages of the technology are practically voided.

Even with the introduction of high-speed internet and information technology, innovations in pharmaceuticals and medical instrumentation still play a large role in the hospital industry. With advances in genomics and a better understanding of the human genome, new pharmaceuticals are being researched and produced. Advances in medical instrumentation allow doctors to obtain more detailed information about patients' medical conditions. However, new technology in medical instrumentation is sometimes abused by physicians. According to an interview with Mike Richardson, Vice President of Planning and Business Development for Covenant Health, some physicians refer to magnetic resonance imaging (MRI) machines as "ATMs." The physicians can order MRI scans for a seemingly unlimited number of conditions and charge exorbitantly expensive prices for them. According to Mr. Richardson, MRI scanning is often used when standard manual tests are sufficient to diagnose a problem (Richardson). Another

problem with advances in medical technology is that numerous hospitals want the new technology, often leading to unnecessary instrumentation in a given region or city.

The hospitals in Knoxville stay on the cutting edge of technology. St. Mary's was one of the first hospital in the area to buy a 64-slice Volume Computed Tomography (VCT) Imaging System, a scanner which produces more detailed images of the body than traditional 16-slice machines. "Slices" refers to the number of images the machine captures within a certain time frame. The 64-slice VCT scanner is faster than older 16-slice machines and exposes patients to less radiation (St. Mary's, "Our"). Covenant Health now offers robotic surgery for gynecological procedures. The surgical robot allows for greater precision, smaller incisions, less pain, shorter hospital stays, and faster recovery (Fort Sanders Regional). Baptist Health now has a machine called Gamma Knife, which is not actually a knife at all. The Gamma Knife focuses 201 radiation beams directly at brain tumors and other brain disorders. The beams don't damage the tissue they pass through, but are effective against tumors when they are all focused on a particular area of the brain (Baptist, "Baptist").

NURSE AND PHYSICIAN SHORTAGES

There is currently a shortage of nurses and physicians in the United States. According to the Bureau of Labor Statistics, a division of the US Department of Labor, an additional 5.3 million health care workers will be needed by the year 2010. Research estimates place the nurse shortage at almost 800,000 and the physician shortage at about 200,000 by the year 2020. These shortages lead to rising labor costs in hospitals for nurses and physicians. Hospitals and the industry are taking various steps to alleviate the shortages. With regard to nurses, hospitals are offering higher wages, better benefits,

better working conditions, and even scholarships to influence more participation in nursing education. With regard to physicians, hospitals are offering higher wages, signing bonuses, and relocation packages. Medical schools are being encouraged to increase admissions to provide a larger pool of future physicians (Lavey). Immigration reform has even had an impact on the nurse and physician shortages. A Senate Judiciary Committee bill passed earlier this year contained provisions to expand the number of visas that could be offered to foreign doctors and nurses to work in medically underserved areas (Kelley).

The hospitals in the Knoxville area are taking actions to alleviate the shortages. St. Mary's, Covenant, and Baptist offer nurses and physicians such benefits as medical and life insurance, retirement plans, vision and dental plans, and tuition reimbursement. Covenant also offers nursing scholarships. University Health System operates the UT Graduate School of Medicine to train physicians and utilizes its UT Memorial Hospital as the teaching hospital for the UT School of Medicine.

DEMOGRAPHIC SHIFTS

The demographic shift that affects the hospital industry the most is the ageing of the U.S. population. In 1960, the proportion of the population aged 65 years and older was 9.2%. By 2005, that proportion had increased to 12.4%. The U.S. Census Bureau estimates that it will continue to rise to over 16% by 2020 and to almost 20% by 2040 (Economist). This ageing of the population will have drastic effects on the hospital industry, as an increasing number of elderly patients seek health care. While more patients will theoretically provide more revenue, the federal government will have trouble bearing the financial burden of increased social security, Medicare, and Medicaid

payments. The proportion of the population of Knox County that is aged 65 years and older is 12.3%, which is extremely close to the national average (American). The increase of the elderly population in the Knoxville area will probably follow the path projected by the US Census Bureau.

U.S. LIFESTYLE

The population of the United States has a remarkable disregard for healthy lifestyle. The U.S. culture is characterized as fast-paced with a focus on getting as much done as possible in a given amount of time. To this end, many people eat unhealthy quantities of fast food. Business people with short lunch breaks. University students who stay up all night studying. Children whose parents don't have enough time to fix a healthy, balanced meal. All this unhealthy eating is leading to a health phenomenon in the U.S. According to estimates by the Centers for Disease Control, at least one-third of the U.S. population is obese (Lavey). The United States is the most obese nation in the world. The second-most obese nation in the world is Mexico with 24.2% of its population being obese. As a comparison, 3.2% of Japan's population is obese (OECD). The disregard for healthy living in the U.S. will lead to further obesity problems and an increased need for health care. Obesity poses problems to many hospital facilities as new equipment has to be purchased to handle larger and heavier patients.

Another characteristic of the U.S. lifestyle that affects the hospital industry is the habit of people to wait until serious disease develops before seeking medical care. In an article entitled "The Next Generation of Health Care", Bill Castell refers to this habit as "Late Disease" treatment. He argues for more holistic treatment of individuals with focus on treating patients early before the onset of symptomatic disease. He refers to this as

“Early Health” treatment (Castell). Such “Early Health” treatment would be beneficial to patients who might avoid the onset of debilitating diseases. Castell argues that “Early Health” treatment could also be less expensive by avoiding the onset of diseases that are expensive to treat.

HOSPITAL REIMBURSEMENT

About one-third of every dollar spent on health care in the US is spent on hospital care. In 2004, nearly \$800 billion was charged for hospital care (Russo). With the soaring costs of medical care, none but the wealthiest of Americans can afford hospital care without the aid of health insurance. According to estimates by the US Census Bureau, 15.7% of the U.S. population is uninsured (Lavey). This has a direct impact on the ability of hospitals to get reimbursed for services provided in emergency departments. By federal law, all emergency departments have to administer aid to those in need regardless of ability to pay. In 2004, uninsured patients accounted for about 4% of the \$800 billion charged for hospital care. Private insurance, usually provided to people in the work force through employer benefit packages, accounted for about 32%. And, about 60% of the \$800 billion was paid by the government through Medicare and Medicaid (Russo).

Medicare is a government sponsored health insurance program intended generally for people aged 65 years and older. Medicaid is a program that pays for health care for needy people meeting certain eligibility requirements. These programs face significant problems as the population ages and more people will seek hospital care. While the government paid about 60% of hospital bills in 2004, it paid about 45% of all health care spending. The Centers for Medicare and Medicaid Services estimate that the government

will pay for 46% of all health care spending in the year 2014 (Lavey). In Tennessee, TennCare is a health care program that works in conjunction with Medicaid to provide health care to needy people. The program also extends medical care to uninsured residents of Tennessee and residents who are not eligible for Medicaid. TennCare has a budget of \$8 million and provides healthcare services to 1.2 million Tennesseans (Bureau).

PROFIT V. NON-PROFIT HOSPITALS

Of interest to the Knoxville hospital industry is the competition between for-profit and not-for-profit hospitals. Currently, all four hospital systems in the Knoxville area are not-for-profit systems. However, Baptist Health System nearly entered into a partnership with Triad Hospitals, Inc., a for-profit hospital system based in Texas. While negotiations with Triad fell through, the possibility still remains of Baptist partnering with another for-profit hospital system. Competition between for-profit and not-for-profit hospital systems is typically fierce. For-profit hospitals prefer to specialize in high-revenue procedures that produce the most profit. Oftentimes, these for-profit hospitals attract a lot of high-revenue business away from not-for-profit hospitals, leaving them to attempt survival on low-revenue services. The introduction of a for-profit hospital into the Knoxville area would eventually cause drastic changes in the area's hospital industry.

Scenario Planning

Scenario planning is a process in which external drivers are identified and scenarios are created. These scenarios are used to help organizations and industries plan for the future. With the numerous external drivers influencing the hospital industry, the hospital industry in the Knoxville area is likely to change drastically by the year 2020.

These drivers (listed and discussed above) are hospital competition, ambulatory surgery centers, technology, nurse and physician shortages, demographic shifts, the U.S. lifestyle, hospital reimbursement, and profit v. non-profit hospitals. This scenario plan will consider these drivers and will present two scenarios.

SCENARIO 1

In the year 2020, fierce competition among hospitals will lead to consolidation of the industry to one not-for-profit hospital system that operates all the hospitals in the Knoxville area. Less money will be spent on technology as the competition between various hospitals is eliminated. Hospitals that constitute excess capacity in the Knoxville area will be shut down and the nurses and physicians redistributed to the other hospitals to alleviate the shortages of those workers. The hospital system will continue to operate ambulatory surgery centers to provide cost-effective convenient care to its patients. Federal reimbursement through Medicare and Medicaid will decrease because of increased financial pressure on the government due to the ageing U.S. population. However, the hospital system will retain a sufficient operating margin due to the scale and scope of its operations and the lack of competition. Increased health care costs will instill a genuine interest in healthy lifestyles among the U.S. population. The hospital system will promote healthy lifestyles through community involvement and educational programs in the school system.

SCENARIO 2

In 2020, there will be three health care systems after Baptist sells out to St. Mary's, Covenant, and University Health Systems. These hospital systems will continue to operate as not-for-profit systems and will remain highly competitive. However,

cooperation between the systems will result in greater focus among the hospitals, reducing duplication of services and unnecessary purchases of new technology. Nurse and physician shortages will continue to plague the systems, but not at the levels predicted years earlier. Medical schools and nursing schools will produce more health care workers and federal immigration policies will encourage foreign health care workers to work in the U.S. Federal reimbursement through Medicare and Medicaid will remain high due to substantial increases in federal income taxes. As the tax increases make the U.S. population aware of the rising costs of health care, more people will take genuine interest in healthy lifestyles to curb the trend of increasing taxes. School-age children will learn about healthy lifestyles as the government enforces mandatory health classes throughout primary and secondary education. As life expectancy in the U.S. increases and the population continues to age, federal health care programs will be offered to people aged 70 years and older, instead of 65 years and older.

Sources Cited

- American Community Survey. (2005, June 28). 2003 Data Profile: Knox County. Washington, DC: U.S. Census Bureau.
- Baptist. (2004). About Baptist. Knoxville, TN: Baptist Health System. Retrieved December 7, 2006 from the World Wide Web: <http://www.baptistoneword.org/aboutbap/facilities/frmfacilities.html>
- Baptist. (2005, February). Baptist is the Only Hospital in East Tennessee to Bring You Gamma Knife, the Gold Standard of Care for Brain Tumors and Other Disorders. Knoxville, TN: Baptist Health System. Retrieved December 7, 2006 from the World Wide Web: <http://www.baptistoneword.org/aboutbap/healthreports/Detail.asp?id=339>
- Baptist Health System of East Tennessee. (2005). Company Profile. Retrieved December 7, 2006 from the World Wide Web: <http://www.answers.com/topic/baptist-health-system-of-east-tennessee>
- Bureau of TennCare Home Page. Nashville, TN: Bureau of TennCare. Retrieved December 7, 2006 from the World Wide Web: <http://www.state.tn.us/tenncare/>
- Castell, Bill. (2005, July 12). "The Next Generation of Health Care." The New York Times, p. B2.
- Covenant Health. (2006). Hospitals and Services. Knoxville, TN: Covenant Health. Retrieved from the World Wide Web: <http://www.covenanthealth.com/aboutus/aboutus.cfm>
- Economist Intelligence Unit. (2006). Population. United States Country Profile, 20-21.
- Fort Sanders Regional Medical Center. (2006, December 4). Fort Sanders Introduces GYN Robot Surgery. Knoxville, TN: Covenant Health. Retrieved December 7, 2006 from the World Wide Web: http://www.covenanthealth.com/ColdFusionApplication/CovHlthWhatsNew/Detail.cfm?Post_ID=17412
- Fort Sanders Sevier Medical Center. (2006, December 4). Covenant Health Receives OK to Build New Hospital and Cancer Center in Sevierville. Knoxville, TN: Covenant Health. Retrieved December 7, 2006 from the World Wide Web: http://www.covenanthealth.com/ColdFusionApplication/CovHlthWhatsNew/Detail.cfm?Post_ID=17413
- Fort Sanders West. (2006). Fort Sanders West Outpatient Surgery Center. Knoxville, TN: Covenant Health. Retrieved December 7, 2006 from the World Wide Web: <http://www.fortsanderswest.com/fswosc.cfm>

- Harrington, Carly. (2006, November 28). "A Major Operation." The Knoxville News Sentinel, p. 42.
- Harrington, Carly. (2006, November 7). "Baptist Won't Wait to Act." The Knoxville News Sentinel, p. 15.
- Jarrard, David. (2005, June). "Common Ground: Hospitals, Physicians and Outpatient Centers." Trustee, 20-22.
- Kelley, Jaimie. (2006, April 3). "Senate immigration bill seen helping hospitals address Staffing shortages." AHA News, 6.
- Lavey, Cameron. (2006, June 22). Industry Surveys: Healthcare Facilities. Standard & Poor's. Retrieved December 2, 2006 from the World Wide Web: <http://www.netadvantage.standardandpoors.com/NASApp/NetAdvantage/showIndustrySurvey.do?code=hef>
- Richardson, Mike. Personal interview. November 30, 2006.
- Russo, C. Allison. (2006, November 30). "The National Hospital Bill: The Most Expensive Conditions, by Payer, 2004." Medical Benefits, 1-2.
- OECD. (2005). OECD Health Data 2005: Obesity. Paris: OECD. Accessed via the World Wide Web: <http://titania.sourceoecd.org/v1=4856404/cl=12/nw=1/rpsv/factbook/10-01-03.htm>
- Spezia, Tony. "The Evolving Local Market." Class presentation. Management 402. The University of Tennessee, Knoxville. October 30, 2006.
- St. Mary's. (2006). Our Health Services. Knoxville, TN: St. Mary's Health System. Retrieved from the World Wide Web: http://www.ehealthconnection.com/regions/tennessee/content/heart_diag64slice.asp
- St. Mary's. (2006). St. Mary's Health System Home Page. Knoxville, TN: St. Mary's Health System. Retrieved December 7, 2006 from the World Wide Web: <http://www.ehealthconnection.com/regions/tennessee/>
- University Health System, Inc. (2005). Company Profile. Retrieved December 7, 2006 from the World Wide Web: <http://www.answers.com/topic/university-health-system-inc>