

**JPS HEALTH NETWORK
MASTER FACILITY PLAN
PATIENT CARE TOWER EXPANSION PROJECT**

Board of Managers
Tarrant County Hospital District

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Purpose of this Report

This report is to provide an overview to a broad range of constituencies and interested parties, including employees, medical staff, house staff, board members, auxiliary and volunteers, donors, elected officials and the residents of Tarrant County. This report describes the processes and decisions that led to the development of the Patient Care Tower, as part of the Master Facility Plan.

The Master Facility Plan was developed as a means to fulfill the following needs:

- Expand services
- Efficiency and effectiveness
- Achieve optimal access
- Facilitate collaborative partnerships

Rationale and History

a. Historical Background – Capital Improvements

With a change in JPS leadership in 2001, a system-wide assessment was made and the future state vision was defined for JPS Health Network. A strategic plan was developed, including mission, vision and values statements. In addition, an assessment of the physical plant and services occurred. Major initiatives to improve the physical plant and add new medical technologies were developed. Since 2001, more than \$129.3 million has been invested in JPS Health Network facilities and equipment. These investments included:

- Opening 5 new operating rooms to increase surgical capacity
- Opening 48 additional medical/surgical and 26 post-partum beds
- Purchase of a 30-bed hospital with 6 operating suites in South Arlington
- Creation of the cardiac catheterization laboratory
- Enhanced radiology services, including an MRI, multi-slice computerized tomography & digital mammography equipment
- Modernizing plant and equipment
- Development of Centers of Excellence in:
 - Women’s health with two outpatient facilities
 - Cardiology with a dedicated Cardiology clinic and diagnostics
 - Oncology with a freestanding outpatient facility
 - Enhanced trauma care and emergency services

Since 2001, new JPS physical locations have been added, including:

- JPS Health Center for Women – Arlington
- JPS Health Center for Women – Fort Worth
- JPS Family Medicine – Alliance
- JPS Family Medicine & Specialty Services – South Arlington

- JPS Center for Cancer Care
- JPS Health Center – Central Arlington
- JPS Diagnostic & Surgery Hospital of Arlington (30 inpatient beds and 6 operating suites)
- Northside Health Center – Federally Qualified Health Center in partnership with University of North Texas – Health Science Center

b. Reason for Expansion

1. Strategic Fit

The community of healthcare consumers has grown and increased in diversity of healthcare needs and the provider community has continued to modernize and expand in order to meet that dynamic change. JPS must move forward in order to advance its mission, values, and strategic plan in order to remain contemporary with the ever changing needs of our community.

In 2004, JPS revisited its strategic plan to test its vision for appropriateness in the changing environment. The mission, vision and values were reconfirmed and only minor changes made in the strategies and objectives within the strategic plan to adapt to shifts in the environment and to advance the JPS Health Network on new initiatives. A major component of the 2004-07 Strategic Plan is the initiation of a master facility planning project. This project included evaluation of the need for a new Patient Care Tower, a medical office building, associated parking needs, and retrofitting of older areas of the hospital campus for new uses.

2. Capacity Issues

Increases in demand for services continue at an impressive rate. The added services over the last few years have attempted to keep pace with the demand. In the four year period FY 2001 - 2005, JPS Health Network has experienced the following growth:

Volume Indicator	FY01 Volume	FY05 Volume	Volume Increase	Percent Increase
Admissions	15,137	21,180	6,043	40%
Patient Days	83,430	120,074	36,644	44%
Average Daily Census	229	329	100	44%
Staffed Beds	303	410	107	35%
Occupancy Rate	75.6%	80.2%	4.6%	6.1%
Surgical Cases	5,116	7,874	2,758	54%
Emergency Visits	51,862	67,122	15,260	29%
Outpatient Visits	462,064	615,429	153,365	33%

An assessment of the current operations of the main hospital campus revealed the following:

- Single Occupancy rooms comprise only 33 percent of available beds.
- Marginal patient satisfaction scores due to physical plant issues.
- Admissions waiting in the emergency department for telemetry beds each day average greater than 27 patients.
- Admissions following surgery are held on a daily basis in the operating rooms and post-anesthesia care unit which delays or cancels surgeries for other patients.

Patients waiting to advance to another stage of their hospitalization can create a “domino” effect, resulting in delays among other patients. When there are insufficient beds (and appropriate level of bed) for patients, this can cause patients to be held longer in the post-anesthesia recovery area before the patient can be moved to an open bed. This can result in postponing surgeries. Delays are also recreated in moving patients from a monitored bed to a medical/surgical bed.

As additional operating rooms became available, so was the need to add additional post-anesthesia beds. An additional 12 PACU beds will become available in February 2006. However, current operating rooms are within a facility with structural walls built in the 1960s. These operating rooms were designed at a time when rooms were smaller and equipment needs were minimal. Today’s practice of medicine requires larger operating rooms to accommodate extensive equipment, lasers, and monitors.

3. Growth Projections

Tarrant County is experiencing population growth at a record pace. According to Claritas, using estimates from the U.S. Census Bureau, Tarrant County’s population is projected to reach 1.71 million by 2009, a rate of increase of 10.3 percent over the 2004 estimate. By comparison, the population in the state of Texas was 22.5 million in 2000 and is projected to exceed 24.4 million by 2009, a growth rate of about 8.7 percent.

Projected population changes for Tarrant County by age cohort are as follows:

- Population age 0-17 in Tarrant County is projected to increase by 7.6 percent between 2004 and 2009, increasing from 431,000 to 464,000.
- Tarrant County population aged 18-64 is projected to increase from 985,000 to 1.09 million between 2004 and 2009, an increase of 10.4 percent.
- Tarrant County population 65 and over is projected to grow 18.5 percent between 2004 and 2009, increasing from 131,000 to 156,000.
- Females age 18-44 in Tarrant County are projected to increase from 316,000 to 336,000 between 2004 and 2009, an increase of 6.1 percent.

The population growth within Tarrant County will create additional demands on the healthcare system. It is vital that the infrastructure of the greater Tarrant County community have sufficient health care services to meet the needs of the current population and the anticipated increases in the near future.

As our population ages, there are forecasted increases in demand for inpatient services. This is converse to projections that were made in the 1990s that hospital bed demand would decrease. In the 1990s, when managed care enrollment was growing, there was collective thought that the demand for inpatient hospital care would decrease nationwide. However, this prediction was never realized. Instead, the demand for inpatient hospitalization has increased since the mid-90s, due an aging population and increased utilization. Futurist Russ Coile and Robert Levine, Vice President of Healthcare for Turner Construction have commented, “If one 100-bed hospital were build every week for the next 10 years, there still would not be enough beds to accommodate all the baby boomers needing care. That’s 500,000 new beds, and some people in the industry think we’ll really need more like 700,000 new beds.”¹

Another aspect of the population that increases demand for hospital beds is the increase in the uninsured population. JPS Health Network serves as the safety net for patients who may not have the means to access care early, thereby resulting in an increase in the hospitalization rate among those who are uninsured. In FY01, JPS Health Network realized \$175 million in uncompensated care cost. In FY05, that figure has grown to \$275 million; an increase of over 57 percent in unreimbursed care. This represented uncompensated care to approximately 87,722 people, of which 35,175 qualified for JPS Connection, the sponsored program for reduced health care costs. The remaining 52,547 persons were uninsured but did not meet the eligibility requirements of the JPS Connection program due to financial status or residency. The 87,722 people without insurance represent multiple outpatient encounters and/or hospital admissions. In FY06, the forecasted amount for uncompensated care is anticipated to cost \$293 million to JPS Health Network. While JPS, as the Tarrant County Hospital District, does receive ad valorem tax revenue, the cost of uncompensated care exceeds the tax revenue. This shortfall is anticipated to continue to grow and is subsidized through improved operating performance and alternative sources of revenue.

FISCAL YEAR	Uncompensated Care Cost	Ad Valorem Tax Revenue	Revenue Shortfall
FY01	\$174,890,000	\$154,528,000	\$20,362,000
FY02	\$193,328,000	\$171,573,000	\$21,755,000
FY03	\$229,387,000	\$184,173,000	\$45,214,000
FY04	\$258,796,000	\$205,254,000	\$53,542,000
FY05	\$274,879,000	\$211,579,000	\$63,300,000
FY06 Budgeted	\$293,108,000	\$226,524,000	\$66,584,000

Construction Upgrade Requirements

Healthcare as an industry has been undergoing huge changes in recent years. Some experts compare the advances in medicine to the Renaissance or the Industrial Revolution. The facilities and buildings in which healthcare is rendered are becoming obsolete and not easily adaptable to the needs of modern healthcare. Patient care and treatment rooms require more equipment for monitoring. Hospital facilities constructed more than 30 years ago may not be easily modified for the new demands of modern medicine. Robert Levine says, “Many systems are still operating 1950s- and 1960s-era buildings. No other industry would be putting high-technology equipment in buildings that are half a century old.”²

The Journal of Healthcare Contracting published a study of the most important factors driving hospital construction³:

1. Facility obsolescence
2. Increased demand for hospital care
3. Rapidly changing technology
4. The growing acceptance of facility design based on evidenced-based medicine
5. Economic and reimbursement factors
6. Consolidation of healthcare facilities

Healthcare is also a continuing business, open for business 24 hours a day, 365 days per year. As such, it is rare that a service can be temporarily closed for renovation. Patient care must be conducted in an atmosphere free of debris, noise and disruption. These demands require any construction to be additive, and renovation of existing facilities cannot occur without disruption of patient care activity.

In addition to the inpatient rooms, advances in surgery have had a tremendous impact on hospital facility design. Surgery requires larger operating rooms to accommodate computer equipment, lasers and large video screens to view robotic equipment within the body. Robert Levine comments, “Operating rooms have to be about one-third larger than they used to be to allow room for booms and computer equipment. In addition, doors and corridors have to be wider, utilities have to be universal, and patient rooms have to be larger. All of this makes it increasingly difficult to retrofit older facilities.”⁴

Single Occupancy Room Environment

One of the key differentiators of the new Patient Care Tower from the existing patient floors at John Peter Smith Hospital is the new construction will be comprised of single occupant rooms for inpatients. Within the existing facility, only 33 percent of the inpatient beds are within single occupant rooms. This has been challenging for today’s medical practices, requiring isolation for infection diseases, patient privacy protections and the personal patient environment of comfort and reduced disturbances. In recent years, hospitals have seen an increase in the number of antibiotic-resistant tuberculosis cases and the growth of MRSA (methicillin-resistant staphylococcus aureus), a dangerous infection that is becoming increasingly difficult to treat with routine antibiotics.

The new minimum standards for healthcare facilities recommend all rooms be single occupancy, both to prevent transmission of nosocomial (hospital-borne) infections and to conform to privacy rules instituted as a result of the Health Insurance Portability and Accountability Act of 1996. Many states have adopted those standards for licensing purposes. And experts predict that by the end of 2006, the federal government will require all new hospitals to have private rooms.⁵

Patient privacy is recognized as a driving factor for not only patient satisfaction, but for the healing environment needed for patients. Susan Gibson, Vice President of Mission Services, St. Alphonsus Regional Medical Center, Boise, Idaho, remarked, “Suppose you check into a hotel, and they said, ‘We’re glad to have you here, and your roommate and his family are already up in the room.’ What would your reaction be? We take people in their most stressful situations; at a time when they most need privacy – both visual and auditory – and we expect them to be satisfied with a ‘roommate’ they don’t even know? That way of thinking has changed. We now believe that private rooms are one of the most important things we can offer.”⁶

Single occupancy rooms not only improve infection control and privacy, but also provide more floor space around the hospital bed for caregivers. A single occupancy room provides more space to navigate around than when there are two beds in a room. This perimeter space is essential for moveable equipment, such as portable bedside radiology machines.

Nationally, healthcare construction standards may very well include requirements that all future construction in hospitals only include single occupant rooms. “I haven’t designed a hospital with anything but private rooms in the last three to five years,” says Joseph Sprague, Chairman of the Revision Committee and Senior Vice President and Director of Health Facilities at Dallas-based HKS, one of the nation’s largest healthcare-architectural firms. “There is no way to meet HIPAA requirements with a multiple-bed room”.⁷

The 125-member Health Guidelines Revision Committee, responsible for deciding how healthcare facilities are built in this nation, has issued a recommendation that future hospitals include only private rooms, a departure that has generated a flurry of controversy.⁸

Increased Efficiencies

Modernizing the inpatient hospital for medical advances, technology, patient comfort and privacy are not the only driving forces for new hospital designs for single occupancy rooms. New care processes have necessitated a change in design towards single occupancy rooms.

When a hospital is primarily composed of double occupancy rooms, there are numerous considerations that must be made prior to assigning a bed to a patient. These include not

just the diagnosis of the patient, but the gender and their physical abilities. Both patients must be of the same gender in a dual-occupancy design. Female patients can only be assigned to room with another female patient, and men with other male patients. A hospital also assigns patients to rooms according to similar diagnosis. Maternity patients room with other new mothers, while orthopedic cases tend to be roomed together. And for orthopedic cases in which a limb is affected, the patient must be assigned to a bed that has accessibility for their unimpaired side (a left hip fracture patient requires a bed with accessibility on the right side). Due to all these considerations, it becomes difficult to fill every bed in the hospital if there is not an exact match for every type of diagnosis. A comprehensive study released in November 2003 on this trend found that occupancy rates reach an average of about 80 percent to 85 percent for semiprivate rooms, compared to the “ability” of single-bed rooms to reach 100 percent occupancy.⁹ Though some experts suggest that having only single occupant rooms adds 10 percent to 15 percent to the construction costs of a hospital, Joseph Sprague, Chairman of the Revision Committee and Senior Vice President and Director of Health Facilities at Dallas-based HKS, says studies have shown that this configuration saves costs in the long run by increasing operating efficiency, boosting occupancy levels, lowering both infection rates, and lengths of stay.¹⁰

Another advantage of the single occupancy room design is the flexibility it offers for patients as their status during their hospitalization changes. Often referred to as the “universal bed model”, the single occupancy rooms in the new Patient Care Tower will be design as *acuity adjustable*, reducing the need to transfer a patient to different hospital units as their status improves. The elimination of transferring a patient aids in efficiency of care, and is less costly to both the patient and the hospital. Hospitals that have implemented the universal bed model also realize cost savings, in part because of the elimination of transfers. It is estimated that each patient transfer costs between \$200 and \$500, from changes in documentation, linen, housekeeping, medication inventory, etc. Transferring a patient can also impact the continuity of care, based on the assignment of a new care team if the patient is relocated to a new patient care unit. Transferring a patient to a new bed also impacts patient satisfaction, as the physical movement can be disruptive to both their physical and emotional needs.

Efficiency is also demonstrated in a reduction in length of stay. Hospitals using the *universal bed model* in cardiovascular services realize a 17 percent to 40 percent lower length of stay than competitive hospitals not using the model. Some hospitals report a 5 percent to 10 percent reduction in nursing hours per patient day with the universal bed model.¹¹

Master Facility Plan Process

Through the master facility planning process, JPS Health Network has adopted the following Design Principles to ensure a construction project that will bring value to the Tarrant County community:

- Environment – Create internal and external environments that foster both healing and a positive work experience, while projecting the appropriate image within the facility’s context. The hallmark of this is all single occupancy patient rooms.
- Function – Configure facilities in a fashion that adapts evolving medical technology and needs (acuity adaptable patient care rooms), while optimizing operations and preserving flexibility for growth and change.
- Cost – Produce within time and budget allocations, facilities that minimize operating costs, including personnel, supplies, and maintenance.
- Schedule and process – Achieve unique and individual solutions through user-oriented partnering in developing innovative approaches to planning and design on time.

The Master Facility Plan Process is a multi-step process of 7 major components:

1. Programming
2. Concept development
3. Schematic design
4. Design development
5. Construction documents
6. Bidding/negotiations
7. Construction administration

The first two components of programming and concept development were initiated in the spring 2003. These processes were conducted in concert with a major operational assessment of the organization to determine efficiencies to be gained within the current environment, but also what additional efficiencies could be gained with redesign of the physical plant. These components included the following actions:

- Volume conversion to space demand
- Workspace requirements
- Workflow adjacencies
- Interdepartmental relationships
- Functional and space programs
- Building organization – horizontal & vertical
- Growth and Change Strategies

By the fall of 2003, JPS entered the schematic design and design development stages. Within these two components, the following actions occurred:

- Refinement of circulation systems
- Layout of room adjacencies and workflow
- Development of building design concepts
- Site development

These items were presented and approved by the Board of Managers in February 2004. HKS, Inc. was selected as the architectural firm for the Patient Care Tower project.

Throughout 2004, HKS performed extensive review of the design to more precisely determine the space needs within each component of the new facility. Material selection built around a consistent color and design theme also occurred during this time. As the

drawings become more finalized, executives at JPS began developing a request for proposals for construction management. Bids were received in early 2005, and several firms presented their proposals for construction management.

In February 2005, the Board of Managers selected the partnership of Austin Commercial and Con-Real to provide construction management services for JPS Health Network's planned Patient Care Tower project.

During the summer 2005, JPS Health Network entered the construction documents stage, with final drawings of the Patient Care Tower and associated parking structures. Upon approval of the construction documents, bidding and negotiations began in the fall of 2005; a final guaranteed maximum price was approved in January 2006.

Over the winter months of 2005 and early 2006, the construction site was prepared by the demolition of existing buildings.

Construction administration is securing the necessary permits in the early weeks of 2006 with construction to commence in February 2006. The project timeline calls for completion by December 2007.

Patient Care Tower Project Components

- Build a new Patient Care Tower with 5 floors and 108 single occupant rooms increasing the percentage of single occupant rooms to 69%
- 12 new state-of-the-art operating rooms serving both inpatients and outpatients, associated recovery space and processing space, with private exits for those leaving the same day
- 36 single occupant rooms per floor that are acuity adaptable for all types of critical care and medical/surgical needs
- New trauma center and emergency department that continues our tradition of leadership in trauma and emergency medicine advancing us from Level II to Level I Trauma status
- 8 Ambulance bays to access the emergency and trauma areas
- Admissions and pre-admit testing areas that afford privacy and one-stop processing features to facilitate access
- Public areas and circulation space that offer a calming respite to those who need services or are visiting patients
- User friendly parking capacity that will meet the needs of our patients, visitors, physicians and employees
- Skybridge providing a connection to the main hospital facility over Main Street for efficient patient, visit and staff flow
- Future plans for a medical office building to facilitate collaborative physician relationships, recruitment and retention of high quality providers and patient accessibility

The Patient Care Tower incorporates numerous design changes to rearticulate the main campus. Currently, there is one main entrance to the main campus, and this creates congestion for pedestrian traffic. The new design will have separate entrances for inpatient care, outpatient care, and a dedicated Emergency Department drive-up entrance.

Total square footage of the new Patient Care Tower is estimated to be 233,816 square feet, encompassing five floors.

Patient Care Tower Project Components

a. Rearticulated Entrance for Inpatient Services vs. Outpatient Services

A key design element of the new Patient Care Tower is the creation of a new main entrance to the John Peter Smith Hospital campus. The main entrance will direct visitors and non-emergent patients to enter into an open space lobby. Open seating areas will allow guests to the hospital campus to relax in comfortable chairs clustered into small groups. A patient information desk will be the focal point for guests to inquire prior to entering the elevators.

Many medical services not related to a scheduled inpatient or surgical admissions will remain in the existing facilities in John Peter Smith Hospital. This includes the specialty clinics, outpatient registration, outpatient pharmacy, outpatient laboratory, and outpatient radiology. Outpatients will continue to use the existing entrances on the west side of Main Street for outpatient clinic appointments.

b. Inpatient Registration and Pre-Admitting Testing Area

A registration area will be available with several bays in which patients can pre-register for their hospitalization or surgery. Immediately behind the registration bays will be a centralized pre-admitting testing area, in which patients can have laboratory and diagnostic tests perform several days prior to their scheduled hospital admission.

c. Emergency Department and Trauma Center

Emergency visits at John Peter Smith Hospital have risen dramatically in the last few years. This is a phenomenon not unique to JPS, but is occurring throughout the United States. Emergency department visits in 2006 are anticipated to approach 70,000 visits. The current emergency department physical space cannot be expanded in its current location to accommodate the growing caseload.

The new emergency department and trauma center within the new Patient Care Tower will have a separate drive-up entrance and a separate waiting area. There will be a larger area devoted to emergency patient triage, with additional patient treatment rooms. In addition, there are eight rooms equipped for trauma patients. Patient arriving via ground ambulance will enter the emergency department through eight ambulance bays located on the north end of the new Patient Care Tower. A dedicated elevator will also be located in close proximity to the trauma rooms with a direct route to the helipad on the roof. It is anticipated that the new emergency department and trauma center will be able to accommodate up to 85,000 emergency visits per

year. This is in addition to the obstetrical triage visits that will enter the existing campus near the Labor & Delivery department. The psychiatric emergency department will continue as a separate intake area in the existing hospital facility. And the Urgent Care Center – Main Campus will continue to operate in the existing facility on the main campus. After the new Patient Care Tower becomes operational, we will assess the vacated spaces in the existing facility and reassign the space for expanded services.

d. Surgical Suites/Operating Rooms

John Peter Smith Hospital has experienced dramatic growth in its surgical volume in recent years. Currently, there are 10 operating rooms functioning on the main campus. However, these rooms were designed and built in the 1960s, when medical technology was not as advanced. Today's surgeries require extensive equipment, including lasers, radiology equipment, large lighting for microsurgical procedures, video cameras and monitoring screens. As such, the current rooms are not sufficiently sized to optimally run required equipment. The new Patient Care Tower will include 12 large operating rooms, all appropriately sized for today's modern equipment. One of the 12 rooms will be reserved as a trauma operating suite for unscheduled emergency surgeries. This room will be located adjacent to a dedicated elevator immediately above the trauma rooms in the emergency department.

In addition to the 12 new operating rooms, there will be 19 surgical preparation rooms for those patients awaiting entry into surgery, and 24 recovery bays and rooms for patients post-surgery.

Outpatient surgery cases will have a special entrance and elevator located on the east side of the Patient Care Tower. This will facilitate access to the parking garage for outpatient surgery patients. A registration area with surgical prep and recovery rooms will allow outpatient surgery cases and their visitors to remain in one area and not have to navigate inpatient care areas.

A large visitor waiting area overlooking the main atrium and lobby will be available to family members during the surgical process. Immediately next to the surgery waiting area will be several dedicated family consultation rooms, allowing family members and physicians to discuss the surgical results in privacy.

e. Central Sterilization

There will be a partial sub-floor built below the grade of the Patient Care Tower to house the Central Sterilization department. This department will be responsible for the sterilization and autoclaving of the surgical instruments to be used in the new operating suites, emergency department and patient care floors of the new Patient Care Tower. Close proximity is of great value, especially for expensive components requiring rapid response. Close proximity also aids in improve inventory management and reduced transportation costs.

f. The Skybridge

Connecting the new Patient Care Tower to the existing inpatient facilities will be a skybridge. The skybridge will enable pedestrian traffic to move from the main facility to the Patient Care Tower without leaving an indoor climate.

The skybridge is designed with two corridors: one for visitor and guest pedestrian traffic, and the other for staff and transporting of equipment and patients on gurneys. A wall will separate the two corridors, but both corridors will have an outside view as they cross over Main Street. Due to different heights of the buildings, the skybridge will connect from the 2nd floor of the new Patient Care Tower to the 3rd floor of the existing facility. Pedestrian traffic will also be able to cross Main Street at street with pedestrian walkways.

g. Intensive Care

Advances in medical technology and techniques of today allow patients to survive many medical problems that had significant fatality rates in past decades. More patients are benefiting from the life-improving technology provided in an intensive care environment. As such, the demand for intensive care level hospital beds has increased, while the demand for traditional medical-surgical care beds has decreased. As such, the entire third floor of the Patient Care Tower will be dedicated to intensive care. Thirty-six single occupant rooms with sliding glass doors will allow for the most efficient design and care for ICU patients. An important design element of the ICU rooms is the mounting of medical equipment to the ceiling. The monitoring equipment will be centralized through a “boom” which can reticulate to be positioned for individualized patient care. The boom also assists in efficient patient care by making equipment more easily accessible, while clearing floor space.

The intensive care rooms will also be adjustable according to the patient’s acuity. As the patient conditions improve, the patient can remain in the same room while use of monitoring equipment is decreased. When the patient is near full recovery, they can then be transferred to a medical-surgical room. By having the ICU as acuity-adjustable rooms, this eliminates the need to transfer a patient several times as they “step down” from intensive care to progressive care. In addition, the progressive care rooms in the new Patient Care Tower will have the capability to flex up, should a patient’s acuity increase.

Each ICU room will also be equipped with an enclosed bathroom with a sink, commode and shower stall. An additional sink will be located in the patient room to facilitate hand washing to reduce the risks of transferring infections. Ample storage and closet space for personal belongings will be in each room, accompanied by shelf space for the display of cards and gifts to the hospitalized patient. A television, built into the cabinetry, will be in each room.

Similar to the surgical floor, a large family waiting area will be located immediately off the main elevators. Special family support rooms will be adjacent to the main

waiting area to provide space for family to have private consultation with the care team. At the far end of each wing will be additional family seating areas.

h. Progressive Care Rooms with Monitoring Capabilities

As with the increase in demand for intensive care beds in hospitals, there has also been a rise in demand for patients requiring electronic monitoring, but not the intensity of an ICU. As such, the fourth and fifth floors of the new Patient Care Tower will be single-occupant progressive care rooms with monitoring capabilities to flex-up to a higher acuity level of care without transferring the patient to ICU.

The fourth and fifth floors will be identical in design, with 36 single occupancy rooms. Each patient room is equipped with a fold-out bed for family members who wish to be near their hospitalized family member. Rooms will also be equipped with an enclosed bathroom with a sink, commode and shower stall. An additional sink will be located in the patient room to facilitate hand washing to reduce the risks of transferring infections. Ample storage and closet space for personal belongings will be in each room, accompanied by shelf space for the display of cards and gifts to the hospitalized patient. A television, built into the cabinetry will be in each room.

The traditional centralized “nursing station” will be decentralized, allowing nursing personnel to document patient care immediately outside of the patient rooms in special nooks equipped with computers and other communication devices. Modified care team work stations will be available at each end of the floors’ wings to facilitate team discussions on patient care.

Each floor will have a main waiting area near the main elevators and enclosed rooms for family and care team consultations. Additional family seating areas are available at the far end of each wing.

i. Helipad

A helipad for helicopter landings will be placed on the roof of the new Patient Care Tower. Patient transports via helicopter service have increased over 600 percent in 2006 from volumes recorded in 2004. An agreement between JPS Health Network and CareFlite has placed JPS on a regular rotation basis for receiving patients via helicopter. The number of helicopter transports landing at JPS will continue to increase as JPS pursues moving from a Level II Trauma Center designation to Level I. Level I trauma designation requires trauma surgeon coverage on site at all times. Upon designation as a Level I Trauma Center, JPS has the potential to receive even more helicopter transports, especially among the most severely injured patients.

The helipad land site located on the roof will be accessible by two elevator stations. A dedicated elevator will be located at the northern end of the roof, which will transport patients directly down to the first floor emergency department and immediately into a trauma room. Two additional elevators will be available on the southern side of the roof to serve as a back-up for the trauma elevator, and to transport patients from the building to a helicopter. The southern elevators are

located in close proximity to the skybridge, allowing the helipad to serve as the air transportation entry point for the entire campus.

j. Parking Garage

Construction of a new parking garage for approximately 865 additional parking spaces is estimated to cost \$8,988,380. This structure will consist of 7 levels, with one of the levels constructed below the grade. The garage will have a high efficiency design, with enhanced exterior aesthetics on the west and south sides. The garage is combined with the central utility plan functions on the north side of the garage. Should a medical office building be constructed on the southeast corner of the site, the garage will have efficient access directly into the office building. The garage is also designed for future vertical expansion, should additional parking spaces be needed in future years.

The parking garage will have several entrances and exits for designated vehicular traffic. A hospital staff entrance will be located on the west or rear side of the garage. This entrance will have an electronic passkey requirement. Upon entry through the staff entrance, there will be an elevated ramp to bypass the visitor parking and direct employees to park on the 3rd tier or higher. Employee parking will also have a designated exit, directing vehicles out through the east or rear side of the garage.

Visitor and patient parking will be accessed through an entrance at the southeast corner of the garage, immediately adjacent to the front entrance to the new Patient Care Tower. The entrance will be gated; allowing access after the driver pulls a parking stub. Parking on the first floor will be reserved for handicapped parking. Additional visitor and patient parking is accessible through the ramps to the 2nd floor and beyond. Visitors and patients will exit the garage on the far northwest portion of the garage, through a staffed kiosk. Upon exit, vehicular traffic will be directed to a private drive that will intersect with Main Street.

The sub-grade level of the parking garage will be accessible through the east side or rear portion of the garage. This entrance will be shared with the employee entrance; however a separate gate with an electronic passkey will allow entrance to the reserved spaces for the medical staff in the sub-grade level.

The parking garage is designed, such that, if a medical office building is constructed on the far southeast end of the property, there will be a connector between the garage and the medical office building for pedestrian traffic. This may be constructed at the sub-grade level or through a canopied connector on the first floor.

An important design element of the garage is its double-helix layout. This layout allows for ramps that are exclusive to one-way traffic. This design is considered to be the most efficient, while reducing the risk of vehicular collisions.

Should the parking garage require expansion in future years, two additional floors can be added, resulting in 247 additional garage spaces. Surfing parking will be available

near the front entrance of the new Patient Care Tower, with approximately 40 additional parking spaces. Several of these spaces will be designated handicap only. A covered portico will allow for vehicles to drop off patients or visitors immediately outside the front entrance.

For efficiency and aesthetics, the new Patient Care Tower's central plant will be integrated into the far north end of the parking garage. This central plant will contain the auxiliary power supplies and back-up generators for the new Patient Care Tower. Adjacent to the central plant on the northeast corner of the garage will be the mechanical and engineering yard to serve the needs of the new Patient Care Tower. Both the central plant and the mechanical and engineering yard will not be visible to pedestrians or vehicular traffic within the garage or on the surface lots near the front entrance. The central plant and mechanical and engineering yard will be visible only by staff and physician vehicular traffic accessing the garage entrance and exit for staff.

Projected Costs

In June 2005, Austin Commercial Inc. /Con-Real Inc., the construction management firm, and HKS, Inc., the architectural firm, submitted an initial guaranteed maximum price of the construction project to be \$50,435,745 for the new Patient Care Tower, excluding the parking garage. This figure was refined through the construction document preparation process, combined with bidding and negotiation with selected sub-contractors, regulatory changes, owner-designated enhancements and the added parking garage. A final guaranteed maximum price was presented for approval in January 2006 at \$59,891,415.

Beyond the construction of the facility, it is anticipated that an additional \$23 million will be spent on medical equipment for the new facility, information technology, telecommunications, furniture, security systems and signage. Professional fees for architectural, engineering and interior design services, administrative costs and utilities fees are estimated to be \$7 million.

Construction of a new parking garage for approximately 865 additional parking spaces is estimated to cost \$8,988,380. Total project costs for construction, equipment, professional fees, administrative costs and a new parking garage is anticipated to be \$89.5 million.

Timeline

- Design development March 2005 – May 2005
- Initial guaranteed maximum price June 2005
- Construction documents June 2005 – November 2005
- Build mockup November 2005
- Demolition – existing buildings December 2005 – January 2006
- Final guaranteed maximum price January 2006

- Tarrant County Commissioners' Court approval January 24, 2006
- Finalize financing February 2006 – March 2006
- Construction of parking garage February 2006 – May 2007
- Construction of Patient Care Tower February 2006 – September 2007
- Move In to Patient Care Tower October – December 2007

Financing Options

JPS Health Network sought the consultation of several professional parties during the project. In December 2004, JPS contracted with a consulting firm to determine the scope of the project and its financial feasibility. Demand forecasts, space and room projections based on forecasted demand, and the financial feasibility to construct and continually operate the new facility was explored. A final report was made in April 2005 with the determination that the Tarrant County Hospital District would indeed need the additional space and that forecasted demand would easily justify the construction. Financial projections determined that the Tarrant County Hospital District was in a strong financial position to use reserved funds combined with debt financing, and not disrupt the financial standing of the organization. Additionally, projections indicated that sufficient funds could be generated to meet operating expenses, working capital needs and other financial requirements, including the debt service requirements associated with the proposed financing.

The Tarrant County Hospital District's revenue bonds are currently rated A2 from Moody's and AA- from Standard & Poor's. Moody's moved the hospital district's revenue bond rating outlook from stable to positive in December 2005.

In the fall of 2005, the executive management team sought the consultation of their financial advisors, First Southwest Company, to determine the most efficient methodology for financing a portion of the project. Several alternatives were considered, including the issuance of Revenue Bonds and Certificates of Obligation. A recent change in law enables Hospital Districts to issue Certificates of Obligation. Certificates of Obligation can be paid with a combination of revenue and tax receipts. The Hospital District plans to repay from projected revenues with no increase in the tax rate of the Hospital District. When compared to Revenue Bonds, Certificates of Obligation offer substantial savings with a lower cost of issuance (estimated \$125,000 savings) and a substantial interest saving as interest rates on Certificates of Obligation are expected to be 5 basis points below Revenue Bonds. In addition, no debt service fund reserve is required for Certificates of Obligation.

Based on these findings, the recommended path for financing a portion of the construction is through Certificates of Obligation. This allows the Commissioners Court and the Board of Managers to authorize the issuance at the most economical rate with the lowest cost of debt issuance. Certificates of Obligation require publication of a Notice of Intent, and may be used for any public purpose. The interest rates for Certificates of

Obligation are the same as General Obligation Bonds because of the ad valorem tax pledge of the Hospital District.

For the total project of \$89.5 million, the Board of Managers is choosing to finance \$30 million in Certificates of Obligation in a negotiated sale to facilitate minority participation. This is to be financed at a fixed interest rate with a 25 year amortization. The process of legal document preparation and Rating Agency presentation is approximately 60 days, allowing for the sale of Certificates of Obligation to occur in March 2006. The issuance costs of the Certificates of Obligation are estimated at \$180,000.

Conclusions and Next Steps

The residents of Tarrant County are blessed with a financially strong public hospital system that is in the rare minority of being able to comfortably expand services and physical plant without severe financial repercussions.

Projections indicate demand for patient services will continue to grow, but the Tarrant County Hospital District is well positioned to meet the growing demand. Recent expansions and increases in access to care have demonstrated financial stewardship, while fulfilling the mission to serve the patients of Tarrant County, regardless of their ability to pay. The JPS Health Network, while maintain fiscal stability, ranks among the highest of public hospitals in the percentage of patients who are uninsured. JPS Health Network fulfills it mission and obligations of serving the uninsured, while building services that places JPS as a high quality provider of healthcare. Continued growth, financial stability and collaborative partnerships will allow Tarrant County's major teaching hospital to become an academic medical center of national prominence.

SOURCES:

1. Futurist Russ Coile & Robert Levine, VP of Healthcare for Turner Construction. The Journal of Healthcare Contracting, March/April 2005.
2. Sharon M. Ruff Richter and Janice M. Bartle, "Under-bedded?" The Journal of Healthcare Contracting, March/April 2005.
3. Sharon M. Ruff Richter and Janice M. Bartle, "Under-bedded?" The Journal of Healthcare Contracting, March/April 2005.
4. R Sharon M. Ruff Richter and Janice M. Bartle, "Under-bedded?" The Journal of Healthcare Contracting, March/April 2005.
5. Sharon M. Ruff Richter and Janice M. Bartle, "Under-bedded?" The Journal of Healthcare Contracting, March/April 2005.
6. Michael Romano, "Going Solo: Private room only provision for new hospital construction stirs controversy". Modern Healthcare. November 29, 2004.
7. Michael Romano, "Going Solo: Private room only provision for new hospital construction stirs controversy". Modern Healthcare. November 29, 2004.
8. Michael Romano, "Going Solo: Private room only provision for new hospital construction stirs controversy". Modern Healthcare. November 29, 2004.
9. Michael Romano, "Going Solo: Private room only provision for new hospital construction stirs controversy". Modern Healthcare. November 29, 2004.
10. Michael Romano, "Going Solo: Private room only provision for new hospital construction stirs controversy". Modern Healthcare. November 29, 2004.
11. Jean Knoedler & Michael Knoedler, "Group Patients by Specialty", Hospitals & Health Networks Online Weekly E-Newsletter for Health Care Executives. March 22, 2005.

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