

Baylor Performs Texas' First Successful Adult Liver-Small Intestine Transplant

Life-Saving Surgery Accessible to Patients in Texas and Southern U.S.

Overview

- Baylor Dallas recently performed the first successful adult liver-small intestine transplant in Texas
- Only six medical facilities in the U.S. have capabilities for intestinal transplant
- Progress in anti-rejection medication presents increased success for transplantation

THE TRANSPLANT TEAM at Baylor University Medical Center at Dallas (Baylor Dallas) performed the first successful adult liver-intestine transplant in August 2005. Earlier this year, the team performed a second transplant cooperatively with physicians at Children's Medical Center, Dallas. These accomplishments make the transplant program at Baylor Dallas one of only six in the U.S. capable of performing this life-saving procedure.

"Now patients in Texas do not have to travel across the country to find an intestinal transplant program. We have the experience here to treat them," says Goran Klintmalm, M.D., Ph.D., chairman and chief of Baylor Transplant Institute. The transplant surgeons on the medical staff at Baylor Dallas have been working for three years to perfect its intestinal transplant procedure.

Intestinal transplants, though rare, offer new life to patients suffering from debilitating digestive diseases. Dr. Klintmalm, Srinath Chinnakotla, M.D., and Edmund Sanchez, M.D., performed the first liver-intestine transplant at Baylor Dallas on 24-year-old Jessica Terrazas, who was diagnosed with Hirschsprung's disease at age 17. The Midland, Texas, resident had undergone numerous surgeries and was left with a

dangerously short intestine and the inability to absorb nutrients or digest solid food. She was being fed intravenously for 12 hours every day. After two years on total parenteral nutrition (TPN), she developed cirrhosis of the liver, and was put on the organ recipient list for both a new intestine and a new liver.

"Technically, intestinal transplants are very difficult," Dr. Chinnakotla says. "Post-operative management is intricate and complex because of immunosuppression and the nature of this transplant."

Small intestine transplants are risky for several reasons, including the intestine's bacterial climate, which makes infection more likely. As a result, anti-rejection medications have historically been less successful in intestinal patients.

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Photoselective Vaporization of Prostate Provides More Precision, Fewer Side Effects for Treatment of BPH

Overview

- Photoselective vaporization of the prostate (PVP) offers a virtually bloodless procedure for the treatment of BPH
- Results are almost immediate, and most patients go home without catheterization
- PVP uses “green” light laser that selectively vaporizes prostate tissue, without deep necrosis and no long-term sloughing of tissue

PHOTOSELECTIVE vaporization of the prostate (PVP) offers multiple benefits for men with lower urinary tract symptoms, such as benign prostatic hyperplasia (BPH). With better precision, minimal blood loss, decreased catheterization time and almost immediate flow rate improvement, PVP offers distinct advantages over the more traditional transurethral resection of the prostate (TURP). Additionally, the outpatient procedure appears to help reduce morbidity and costs associated with conventional treatment for BPH.

“PVP is probably the closest minimally invasive procedure that can still get results close to TURP,” says Josh Fine, M.D., urologist on the medical staff at Baylor University Medical Center at Dallas. “The big advantage is that PVP is more easily performed as an outpatient procedure. It’s virtually bloodless, with

less fluid absorption. When patients leave the OR, they have a nice, open channel, allowing urinary flow rates to improve almost immediately.”

Physicians at Baylor University Medical Center at Dallas are using the GreenLight PV® laser system which uses proprietary technology to create high energy pulses of 532 nanometer, or “green” laser light. The green light is selectively and highly absorbed in the blood of vascular prostate tissue, resulting in quick vaporization of prostatic tissue while causing hemostasis in a very shallow (1 to 2 millimeters) zone of coagulation. Physicians can remove obstructive tissue of the prostate and with fewer side effects compared to TURP. Almost all laser energy is absorbed in the tissue that is vaporized.

“This particular laser is a little more precise than others on the market, and seems to be tolerated better than many other BPH procedures,” Dr. Fine says. “It is selectively absorbed by hemoglobin in the prostate tissue, which differentiates the technology.”

Other lasers and energy sources such as Nd:YAG, 800nm diode, Radio Frequency and Microwave are not highly absorbed in the prostate gland, causing deeper penetration and heating. The resulting necrosis and sloughing of tissue over time has been the source of irritative symptoms and delayed symptom relief. (*Source: LaserScope*)

Another prevailing benefit of PVP is that many patients are able to go home without catheterization. Traditional treatment may require up to 2 to 3 days of post-procedure catheterization. Dr. Fine reports roughly two-thirds of his patients go home without a catheter.

For the average size prostate, PVP takes about an hour, although the time

can fluctuate based on prostate tissue, prostate size and prior treatment history. Patients are discharged within a few hours of the procedure. They typically have no dysuria or other long-term side effects. Occasional symptoms after the procedure may include urinary urgency and/or frequency, a small amount of bleeding with urination, and some mild burning or discomfort during urination. These symptoms generally subside in 1 to 2 weeks. There have been no reports of erectile dysfunction resulting from PVP.

As an outpatient procedure, PVP has been shown to reduce costs associated with hospitalization and OR time and supplies. Greenlight PVP can produce dramatic improvement in urinary flow with long-lasting relief of symptoms, minimal catheterization, fast recovery and high patient satisfaction.

For patient referral or more information on photoselective vaporization of the prostate (PVP), contact ConsultLines at **1-800-4BAYLOR**.

Baylor Researchers Seek to Identify Standards of Care for DVT Among Traumatic Brain Injury Patients

Overview

- Traumatic brain injury (TBI) patients are at increased risk for blood clots, or DVT
- The goal of Baylor's research is to establish guidelines of care for TBI patients to prevent DVT

DEEP VEIN THROMBOSIS (DVT) is a particular problem among patients with traumatic brain injury (TBI). Mary Carlile, M.D., medical director of TBI at the Baylor Institute for Rehabilitation (BIR), is conducting a research study to identify safe and effective methods for preventing and treating DVT in these patients. As the lead institution, BIR is collaborating with 11 other rehabilitation centers across the country in this study, funded by a grant from the National Institute on Disability and Rehabilitation Research.

Patients with TBI are at increased risk for DVT since many have been in an intensive care unit for up to a month or longer after a severe accident or disease. Anyone who has been immobilized for long periods is more susceptible to DVT. Also, rehabilitation patients often have suffered multiple traumatic injuries, such as fractures of the leg or pelvis, making them more likely to develop blood clots.

The goal of the research is to help establish standards of care for preventing DVT among TBI patients.

“Currently, there is no consensus among physicians about the best way to handle this potentially life-threatening condition in TBI patients—unlike, for example, in joint replacement patients, where guidelines for DVT prevention are already established,” Dr. Carlile says. “The problem is that patients with TBI also may have bleeding in the brain, and administering anticoagulant therapy to thin the blood against clots also risks potentially damaging brain hemorrhage. So we’re walking a fine line. We want to find out what works best so we can create guidelines and a standard of care.”

Research is coming from a case report that will collect 152 pieces of information about each TBI patient

enrolled in the study, detailing their experience with blood clots. This information will be used to develop a large database. Dr. Carlile and her colleagues have been collecting data for two years, and the study will be completed in June 2007. She anticipates enrolling more than 2,000 TBI patients, making this the largest study ever provided on DVT in this patient population.

“With blood clots, no single prevention or treatment method is 100 percent effective. However, we hope this work will have a positive impact on many patients’ lives in the future,” Dr. Carlile says.

For more information on the DVT study, contact **(214) 820-9593**.

Baylor Establishes Drop-off Site for North Texas Milk Bank

Baylor University Medical Center at Dallas (Baylor Dallas) recently became a milk drop-off site for the Mother’s Milk Bank of North Texas (MMBNT). Baylor’s participation in the program supports the American Academy of Pediatrics (AAP) recommendation in 2005 that babies should receive human milk for the first year of life.

The MMBNT’s primary emphasis is to serve infants in area neonatal intensive care units, says Kathy Chaney, R.N., Baylor’s lactation consultant. “Although further research is needed, some studies already suggest that babies do as well on donor milk as on their own mother’s,” she adds. “The milk bank is a tremendous service to support mothers who are unable to provide milk for their own infants.”

Donors to the program are healthy mothers who are currently breast-feeding infants less than one year of age and have a surplus of milk. The donated milk is taken to a designated drop-off facility. In North Texas there are five drop-off sites, including locations in Fort Worth, Bedford, Richardson, Dallas County Health and Human Services office, and Baylor Dallas.

The milk is then sent to be pasteurized and prepared for distribution to area NICUs. The milk is physician prescribed. Currently, more than 3,000 ounces are being dispensed each month to NICUs throughout North Texas. For more information about the milk bank program, call Kathy Chaney at **(214) 820-8555**.

Robotic Technology Enhances Precision

Women and Infertility: Tubal Reanastomosis Patients Benefit from Robotic Technology

Overview

- True microsurgery procedure
- Laparoscopic/day surgery
- “Master-slave” remote system
- Enhanced magnification
- Dual cameras—3D effect
- Fine instrumentation
- Use of fine sutures (8-0 vicryl)
- Excellent tissue approximation

WOMEN SEEKING TUBAL reanastomosis can now benefit from the robotic-assisted technology at Baylor University Medical Center at Dallas (Baylor Dallas). The daVinci® System enables physicians to perform the procedure in a day surgery setting, offering comparable outcomes and results as open surgery, but usually with faster recovery and less trauma to the patient.

The technology addresses the limitations of laparoscopic anastomosis, such as less tactile sensation, depth perception and decreased fine hand movements.

“This system goes beyond the technology that was currently available,” reports Michael Putman, M.D., a reproductive surgeon and infertility specialist on the medical staff of Baylor Dallas. “We now have a true microsurgical procedure in a day surgery setting. Dual cameras provide a 3-D effect, and the very fine instrumentation mimics what

I’m doing with my hands so I can obtain precise tissue approximation.”

The daVinci® System allows physicians to manipulate the instrumentation to reconnect the fallopian tubes to restore their function. Physicians work from a console just a few feet away from the patient, using their own hands to direct the robotic hands in the operating field. Trained staff work at the operating table to provide support and assistance during the procedure.

Reanastomosis generally takes 2 to 3 hours, and requires four 8-mm incision sites for ports that allow for two cameras and instruments. The OR staff undergoes thorough training to learn the daVinci® System and properly use its features. Dr. Putman is the only surgeon in the Dallas area, using the daVinci® System for tubal reanastomosis.

Enhanced visualization, dexterity, precision and control give physicians the ability to perform the same surgery that would have been performed as an open surgery, and with comparable results.

“If a patient wants to have another child, but had a tubal ligation, her options are to put the tubes back together or undergo in vitro fertilization,” Dr. Putman says. “This procedure enables me to provide a day surgery option that I wasn’t able to offer before, and with comparable outcomes as a laparotomy. This is a tremendous choice for someone who doesn’t want open surgery or the risks of multiple births that come with in vitro fertilization,” Dr. Putman says. “The shortened recovery time also enables the patient to continue fertility treatment sooner than open surgery allows.”

Women who have too much damage from tubal ligation or who are of advanced maternal age would not be candidates for the surgery. More than 4 cm of the tube must be available for reconnection, and the fimbria needs to be intact. Initial assessment also includes a semen analysis from the male to ensure fertility.

“This robotic technology is clearly something that is better for the patient,” Dr. Putman says. “We’ve taken reanastomosis to the next level by making this a day surgery that’s minimally invasive, with comparable medical outcomes and technical advantages of microsurgery.”

For more information about tubal reanastomosis and the daVinci® System, contact ConsultLines at **1-800-9BAYLOR**.



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Robotic arms provide the dexterity and precision of the human hand.

Power and Dexterity for Delicate Procedures

Robotic-Assisted Prostatectomy Has Potential to Reduce Side Effects of Open Surgery

Overview

- Robotic-assisted prostatectomy offers better visualization and more precise dissection
- Procedure generally reduces blood loss, shortens hospitalization and promotes faster recovery
- Procedure provides results comparable to open surgery, with less trauma to surrounding tissues and nerves

outcomes, such as urinary incontinence and erectile dysfunction, while maintaining the same oncologic efficacy,” says Matthew Shuford, M.D., urologist on the medical staff at Baylor Dallas.

The laparoscopic prostatectomy is performed through several small incisions, or ports, in the abdomen, measuring 5 mm to 10 mm in diameter. These ports enable the placement of a camera and laparoscopic instruments without a major incision. The procedure is similar to the open prostatectomy, removing the prostate, seminal vesicles and lymph nodes through the ports and then closing with a few stitches.

A novel camera system provides a magnified three-dimensional image of

internal structures, providing better visualization and therefore more precise and efficient surgery. This magnification also enables physicians to decrease the manipulation and trauma to surrounding tissues and nerves and increase the patient’s chance of preserving erectile function and continence after surgery.

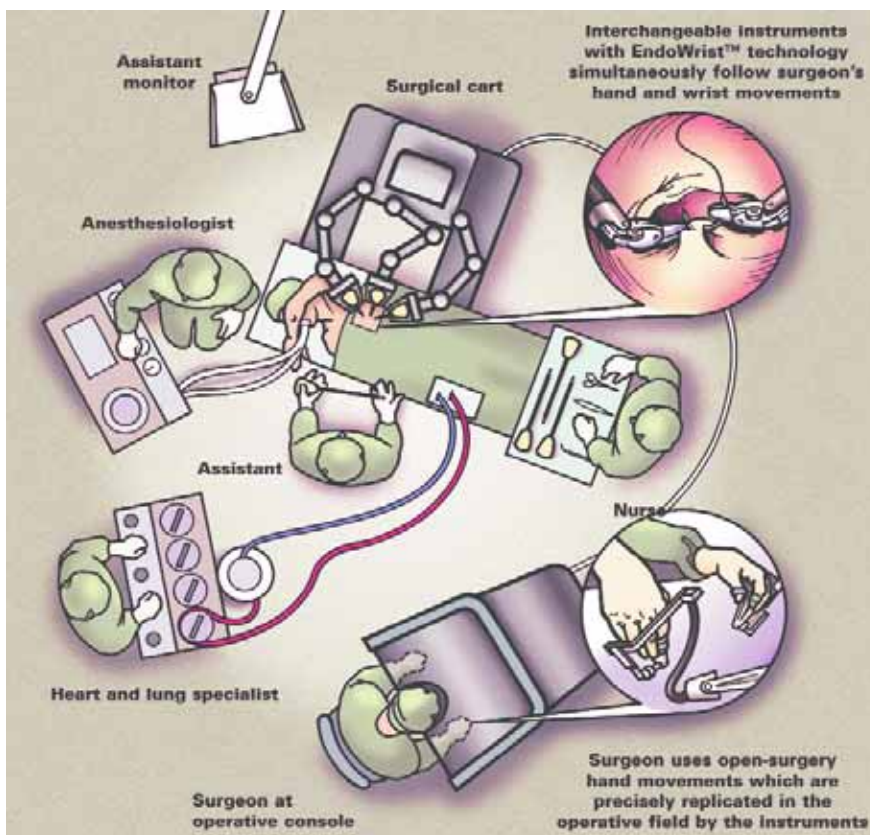
Another key benefit of the daVinci® System is the robotic arms that give physicians the ability to direct dissection and reconstruction with the dexterity of a human hand. Sitting in a console near the operating table, the surgeon places his or her hands in special devices that direct the robotic arms’ movements with accuracy and precision.

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OPEN RADICAL retropubic prostatectomy has been the standard surgical treatment for cancer of the prostate, but complications, such as urinary incontinence and impotence continue to present challenges and compromised quality of life for many patients. Urologists on the medical staff at Baylor University Medical Center at Dallas (Baylor Dallas) are taking steps to remedy those challenges by also offering an alternative to traditional prostatectomy: robotic-assisted laparoscopic prostatectomy.

Robotic-assisted laparoscopic prostatectomy uses the technology of the daVinci® System to provide patients a minimally invasive option with some advantages over open surgery.

“Theoretically, the advantages include decreased pain, decreased blood loss, and patients returning to work earlier. For prostate cancer, one goal is to provide improvement in the functional



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Intraperitoneal Hyperthermic Chemotherapy Offers Effective Treatment for Mucin-Producing Peritoneal Cancers

Overview

- Intraperitoneal Hyperthermic Chemotherapy (IPHC) offers more effective treatment than systemic chemotherapy alone for patients with peritoneal carcinomatoses
- Heating provides synergistic effects by increasing uptake of chemotherapy within the tumor and inhibiting DNA repair mechanisms
- Early diagnosis and intervention are key to disease management and improved quality of life

PATIENTS DIAGNOSED with peritoneal carcinomatoses often have little or no recourse for effective treatment, but a growing emphasis on the use of heated chemotherapy after debulking surgery stands to improve both the quality and length of life. Surgical oncologists on the medical staff at Baylor University Medical Center at Dallas (Baylor Dallas) are using Intraperitoneal Hyperthermic Chemotherapy (IPHC) to treat this fatal cancer, which generally results in bowel obstruction, ascites and pain as it progresses. In many cases, these complications lead to a rapid demise and poor quality of life.

Historically, results from systemic and palliative surgical treatments for

malignancies arising from the colon, appendix, stomach, and pancreas have been poor. The limited peritoneal penetration of systemic chemotherapy only offers minimal effects.

“IPHC is growing in utilization for the treatment of gastric, colon and ovarian cancers and is now clearly established in patients with appendiceal mucin-producing tumors or pseudomyxoma peritonei (PMP),” says Joseph Kuhn, M.D., surgical oncologist on the medical staff at Baylor Dallas. “It is a very good treatment for mucinous benign and malignant neoplasms. Approximately 50 percent of patients with these mucin-producing tumors we have treated can remain free of disease with this modality.”

IPHC involves scraping away the tumors, or debulking, with the goal to remove all evidence of disease. After debulking and while the patient is still in surgery, two inflow catheters are placed in the left and right hemidiaphragms. Two outflow catheters are placed in the deep pelvis and superficial pelvis. The skin is closed, and a solution (lactated Ringer’s solution) is circulated using a roller pump and gradually warmed to 42° C. Mitomycin-C 30 mg is then infused into the solution and circulated. To obtain optimal diffusion of the chemotherapy throughout the peritoneal cavity, the abdomen is continually massaged throughout the procedure. After two hours, the abdomen is washed out with the solution, is opened and inspected. The tubes are removed and the incision is then closed.

Clinical studies with intraoperative perfusion systems show that the addition of heat has a synergistic effect on the chemotherapy. The combination of heat and mitomycin-C, in theory, increases

penetration to >3.0 mm and increases cellular accumulation. Also, with the addition of heat at 42° C, the drug is activated more quickly, increasing the response in previously resistant cells and inhibiting the intrinsic DNA repair mechanisms.¹

Physicians at Baylor Dallas use the FDA-cleared ThermoChem™ HT-1000 system from ViaCirq, a fully integrated system specifically designed and manufactured for intraperitoneal hyperthermia. The ThermoChem™ HT-1000 is a system with integrated subsystems and devices for fluid control and accurate temperature maintenance. All operations are monitored by computer, displayed and managed through an interactive touchscreen monitor.

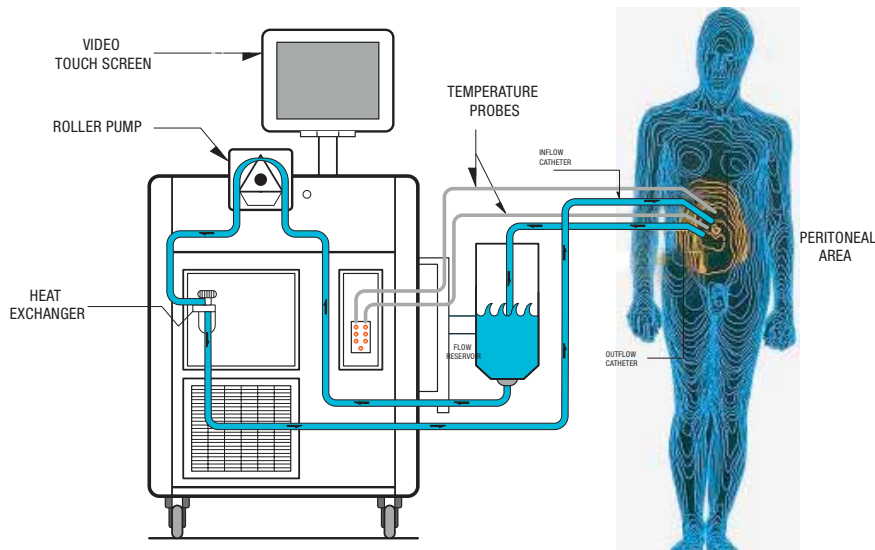
Candidates for IPHC are those with disease confined in the abdomen, and early in the course of their disease. Patients should be in otherwise good health, with strong heart and liver functions and fit enough to undergo a rigorous surgery. There is no strict age criteria, but patients are typically less than 70 years of age.

“Ideally, we’d like to identify patients early in their disease. For example, if a patient was having colon cancer surgery and malignant cells were discovered in the abdomen, IPHC could clearly become part of the treatment regimen,” says Jeff Lamont, M.D., surgical oncologist on the medical staff at Baylor Dallas. “There’s good evidence that IV chemotherapy following IPHC makes this treatment more effective.

“With pseudomyxoma and appendiceal cancers, it’s a fair statement to say results can be dramatic,” he adds. You don’t want to miss a window and wait until a patient is so debilitated and no longer a candidate for IPHC. Our hope

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3. The ThermoChem-HT continually circulates the heated solution through the peritoneal cavity. This raises the temperature in the peritoneal cavity to the desired target temperature.

is to get people to think of this earlier in the course of the disease.”

Dr. Kuhn concurs. “The more advanced the disease is, the more time consuming, laborious and risky the surgery. The technique for removing surface-based tumors is difficult. Some cases have required eight hours of peeling away implants prior to the two-hour perfusion of chemotherapy.

Peritoneal disease is very difficult to manage with IV chemotherapy alone,” he adds. “Early recognition allows for early application of this therapy.”

To learn more about intraperitoneal hyperthermic chemotherapy, contact **1-800-9BAYLOR**.

(Continued from page 1)

Adult Liver-Small Intestine Transplant

According to a 2003 report of the Intestine Transplant Registry, early transplant efforts failed because of refractory graft rejection and sepsis. Outcomes improved in the early 1990s, but survival rates were still low compared to other organ transplants. Today, the use of antibody induction immune suppression with monoclonal IL-2 receptor blockers or polyclonal antilymphocyte agents are key factors for success. The study also found most intestinal recipients were being maintained on tacrolimus and steroids.

An estimated 20,000 people suffer from some form of intestinal failure. Only a very small number of people—one in a million—become eligible for intestinal transplants. Dr. Chinnakotla estimates 10 to 20 patients in Texas have been forced to go out of state every year

for intestinal transplants. His goal is to perform 10 transplantations at Baylor Dallas in the course of one year.

In addition to Hirschsprung’s disease, conditions such as short gut syndrome, intestinal atresia, volvulus, gastrochisis, necrotizing enterocolitis and ischemia are diagnoses among potential transplant candidates. Many of these diseases are common in children and young adults.

“For many cases, the first line of treatment is IV nutrition, which is expensive, leads to a poor quality of life and over time, causes liver damage,” Dr. Chinnakotla says.

Intestinal transplants offer recipients the opportunity to resume a normal lifestyle, and in most cases, stop TPN. They are able to eat solid foods, resume normal activities and experience an

improved quality of life. Studies also show intestinal transplantation is highly cost-effective after two years in comparison to the long term costs of TPN.

The investment Baylor Dallas has made in the program signifies its commitment to treat not only routine cases, but the most medically sophisticated, which enables physicians to provide a full spectrum of care for all patients.

“The fact that Baylor is willing and able to offer this procedure emphasizes its commitment to be on the leading edge for its patients,” says Daniel DeMarco, M.D., a gastroenterologist and medical director for endoscopy at Baylor Dallas. Dr. DeMarco was the first physician to treat Jessica Terrazas when she was referred to Baylor Dallas.

Referring a Patient to Baylor University Medical Center at Dallas

With one phone call, a referring physician can request a referral to a specialist, an appointment for a patient, a consult, or an inpatient transfer. Call **1-800-9BAYLOR** and a dedicated ConsultLines representative will try to assist you and your requests. You or your office staff can use the ConsultLines to reach specific Baylor departments for information as well. You also can request a copy of the newest Physicians and Services Directory for Baylor University Medical Center at Dallas.

**DIRECT/INPATIENT,
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NEONATAL TRANSFERS:**

Call 1-800-9BAYLOR

Baylor University Medical Center at Dallas (Baylor Dallas) has dedicated a nurse to try to coordinate the transfer of inpatients for physicians in the region to Baylor Dallas. This includes those transfers without an accepting physician.

Inpatient transfers should be current acute inpatients who may require a continuation of acute care, specialized care or a higher lever of care not available at your local hospital. The nurse will attempt to find an accepting physician, reserve a bed, and work with Baylor's Access Service to verify insurance coverage.

All the referring physician or his representative needs to do then is to call 1-800-9BAYLOR to contact the nurse coordinator and give the clinical and financial data required to facilitate the transfer process. Baylor Access Service will need a face sheet faxed to them at **(214) 820-2411**.

(Continued from page 5)

Robotic-Assisted Prostatectomy

"This is a significant improvement over standard laparoscopic surgery, particularly with the improved dexterity and visualization," Dr. Shuford says. "The costs to the patient are no different than traditional surgery and the procedure is FDA approved and covered by insurance.

"The primary goal of prostate surgery is to offer a potentially curative procedure," he adds, "and initial studies support equivalence of the robotic-assisted prostatectomy with open surgery."

To learn more about robotic-assisted prostatectomy, contact ConsultLines at **(214) 820-9BAYLOR**.

To be removed from the mailing list, call 1-800-9BAYLOR.

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