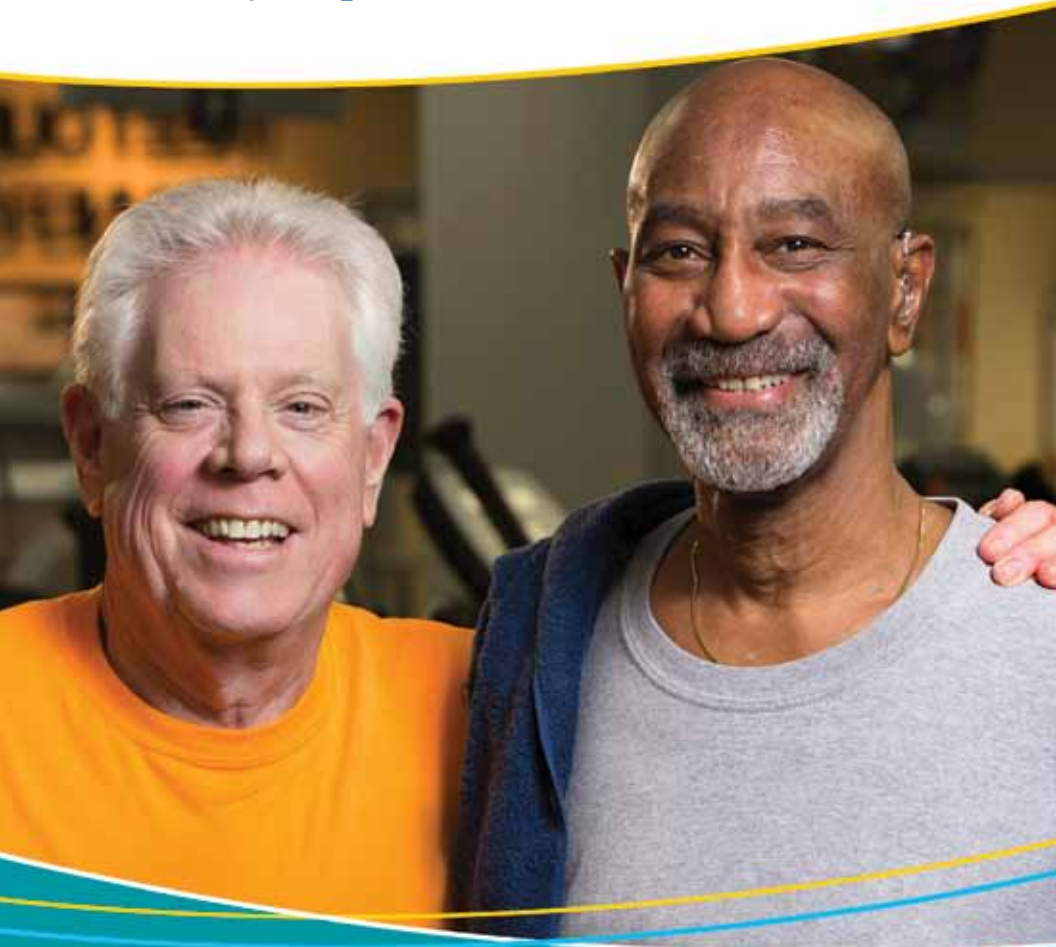




MedStar Georgetown
University Hospital



Comprehensive Care for Prostate Cancer

Best friends Doug Meyer and Raymond Jackson were treated with CyberKnife® which saved them both.

Knowledge and Compassion
Focused on You

The American Cancer Society estimates

that nearly 221,000 cases of prostate cancer will be diagnosed during 2015 making it the second most common cancer among men. In fact, nearly one out of every seven men in the United States will develop the disease at some point during his lifetime. The District of Columbia leads the nation in both the incidence of prostate cancer and mortality rates.

But there's good news. Nearly 3 million American men are living with prostate cancer today.

And MedStar Georgetown University Hospital—a leader in innovative and compassionate patient care—is actively working to make the outlook even better for current and future patients, everywhere.

From conventional to cutting-edge treatments, MedStar Georgetown features a complete array of advanced therapies. Additionally, clinical trials offer some patients tomorrow's treatments today, further expanding options for improved care and outcomes. At the same time, physician/scientists at the renowned Lombardi Comprehensive Cancer Center search for even better approaches and, ultimately, a cure through basic and translational research.

Guided by our Jesuit tradition of *cura personalis*—caring for the whole person—MedStar Georgetown provides physical and spiritual comfort to men and their families, assuring that every patient gets the medical treatment he needs and the personal attention he deserves.



More Options, More Hope

Unlike other malignancies, prostate cancer has a variety of treatments. In fact, experts estimate that several safe and effective therapies may exist for every case of prostate cancer. The best treatment depends upon its ability to control each man's unique disease, along with such considerations as age, personal expectations and current health issues. Choosing what's right for you—the least invasive therapy with the best outcome and fewest long-term side effects—can be both challenging and confusing.

Fortunately, MedStar Georgetown University Hospital—home of the largest and most comprehensive prostate program in the area—is here to help every step of the way.

Unique in the area, MedStar Georgetown's multidisciplinary prostate cancer team includes recognized leaders in urology, robotic surgery, radiation medicine and oncology. Together, they assure that every patient is evaluated for the most appropriate treatment plan and cared for as an individual. Cancer nurses, social workers, nutritionists and counselors round out the team, along with researchers who seek to improve today's care and find tomorrow's cure.

Beyond expertise, MedStar Georgetown offers proven and promising approaches, techniques and technology to optimize results while minimizing side effects.

Whether it is surgery, radiation therapy, medical oncology or some combination thereof, each treatment has its place in the arsenal against prostate cancer. You and your physician will decide together what is best to help you get on with your life.

Prostate Therapies Offered by MedStar Georgetown

- Active surveillance
- Open and robotic prostatectomy with the da Vinci® Surgical System
- CyberKnife® Robotic Radiosurgery System
- Other radiotherapies including:
 - RapidArc® with Image Guided Radiation Therapy (IGRT)
 - Intensity Modulated Radiation Therapy (IMRT)
 - Low-dose and high-dose brachytherapy (seed therapy)
- Chemotherapy
- Hormone therapy
- Radiopharmaceuticals, including Xofigo
- Immunotherapy, including Provenge®
- Cryosurgery
- Clinical trials through the Lombardi Comprehensive Cancer Center—one of only 41 comprehensive centers nationwide and the sole site in the area to earn the National Cancer Institute's prestigious designation

Robotic Prostatectomy With the da Vinci® Surgical System

For many men under 65, surgery to remove the prostate—called prostatectomy—is often the answer, particularly when their cancer is early-stage and localized, or confined to the gland.

Studies confirm that surgery produces the best long-term results for such candidates, with most patients remaining cancer-free 15 to 20 years later. But traditional, or open, surgery may carry a higher risk of post-operative complications. Fortunately, minimally invasive techniques—especially robotic surgery with the da Vinci surgical system—have lessened many of these while contributing to faster recoveries and higher success rates.

Da Vinci's precision, flexibility and range of motion let the surgeon reach smaller spaces and work around corners that hand-held tools can't. Combined with its 3-D magnification and ability to eliminate even minor, unintended motion, robotic surgery results in less blood loss and pain than open procedures. Patients also experience shorter hospital stays and an easier, faster recovery. In fact, most men resume regular activities in one to two weeks following da Vinci versus four weeks after open surgery. As a result, robotic surgery today accounts for nearly 85 percent of all prostatectomies performed in the U.S.

Benefits of the da Vinci Surgical System

- Decreased blood loss and need for transfusion
- Less risk of infection
- More precise nerve sparing for potency
- Earlier return of urinary continence
- Reduced pain
- Fewer complications
- Less scarring than traditional open surgery
- Shorter hospitalization
- Quicker return to normal activities

Da Vinci Plays Starring Role in Actor's Life

Garry Westcott is back in the saddle, thanks to MedStar Georgetown University Hospital, its expert prostate cancer team and a robot named da Vinci. In fact, a mere two weeks after surgery, the part-time actor and full-time countersurveillance professional was filming a new episode of the web western, *Thurston*, with no problem.

"When I learned I had prostate cancer, there was never any question where I would go," says Garry, noting his wife Judy spent her entire nursing career at the hospital and was familiar with its superb reputation for urology. "But neither of us knew what treatment I should have."

MedStar Georgetown answered that question.

There, Garry reviewed his options with a urologist, radiation oncologist and medical oncologist, all specializing in prostate cancer.

"I discovered I was eligible for radiation therapy, radioactive seed implants, radical prostatectomy by conventional or robotic surgery and, possibly, chemotherapy," Garry says.



Judy and Garry Westcott

"We all agreed that surgical removal of the prostate was my best bet."

Garry underwent robotic surgery in March 2012 with urologist Dr. Keith Kowalczyk. Three days later, he took Judy out to lunch to celebrate. Since his operation, his PSA plummeted from 5.1 to an undetectable level.

Says the Alexandria resident, *"Everything went so smoothly. Dr. Kowalczyk is an artist and master of the procedure; my small scars are hardly visible today. Prostatectomy with da Vinci was so much easier than I anticipated."*



Some members of the prostate cancer team include (left to right) Drs. Anatoly Dritschilo, Chair, Radiation Medicine; Nancy Dawson, Hematology/Oncology; John Lynch, Chair, Urology; and Sean Collins, Radiation Medicine.

CyberKnife® Robotic Radiosurgery System

When removal of the prostate is not an option, the non-surgical CyberKnife is often a man's next best bet. CyberKnife destroys tumors using highly precise, targeted radiation, with minimal damage to surrounding healthy tissue. Unlike conventional radiation therapy that can take up to 40 sessions, CyberKnife is complete after only five treatments.

An outpatient procedure, CyberKnife treatment begins with the implantation in the prostate of four tiny gold fiducials that act as markers or targets for the system's missile-like rays. Afterward, a team of experienced physicians uses MRIs, CT scans and 3-D technology to pinpoint the exact size and location of the patient's cancer to create a treatment plan.

A week or so later, the patient returns for five days of therapy, administered over one to two weeks. CyberKnife's robotic arm can approach even hard-to-reach locations from virtually any angle, using X-ray cameras to find the tumor's exact location. While they remain locked on the target, the system's crossfire technique delivers as many as 1,400 highly pinpointed beams of radiation to destroy the tumor.

Each treatment lasts about an hour. Patients are usually able to resume their normal activities almost immediately after each session. Follow-up consists of regularly scheduled PSA (prostate-specific antigen) tests and monitoring.



Best Buddies Share Same Doctors, Best Results

When Doug Meyer learned he had prostate cancer, the nonprofit administrator immersed himself in studying the disease and its many different treatments.

"I looked into robotic prostatectomy, other radiation therapies, cryotherapy and even visited a hospital in Florida before I made up my mind," he says.

That research led him to the safe, short, effective solution he sought: CyberKnife with Dr. Sean Collins at MedStar Georgetown University Hospital—the area's largest and most comprehensive prostate center.

"Treatment was so fast," Doug says today. "I went to the hospital, took off my shoes and belt and just lay there on the table. An hour or so later, I got up and went to work. I had no side effects, and treatment didn't affect my lifestyle."

So when his gym buddy, educator Ray Jackson, announced his PSA was 7.4 two years later, Doug immediately referred him to the same team that had cured him.



Area residents and prostate cancer survivors Ray Jackson and Doug Meyer

Ray, though, had a urinary obstruction that had to be taken care of first. Fortunately, the hospital's comprehensive urology department had what he needed and Ray was soon ready for the cancer treatment that was right for him, CyberKnife.

Today, Ray's PSA is .023 and both he and his wife are "hooked on the hospital."

"If you're looking for a painless, professional experience with a caring and committed staff, go to MedStar Georgetown," Ray advises.

CyberKnife is most appropriate for men with early-stage, localized tumors; i.e., confined to the prostate. Others with higher-risk cancers may be treated with a combination of CyberKnife and Intensity Modulated Radiation Therapy (IMRT).

CyberKnife Works

MedStar Georgetown University Hospital—the first hospital on the East Coast to offer the technology—is among the world’s most experienced CyberKnife sites, particularly for prostate cancer. Altogether, the hospital’s experts have administered more than 21,500 CyberKnife treatments to tumors of the head and neck, lungs, pancreas and liver, in addition to the prostate.

Recent research has proven that higher doses of radiation decrease the chance of prostate cancer recurring. CyberKnife’s laser-like



In 2009, James Hansen of Virginia—pictured with CyberKnife specialist Dr. Sean Collins—became the 200th patient to receive CyberKnife radiation for prostate cancer at MedStar Georgetown University Hospital. Today, that total tops 800.

accuracy can deliver those highly concentrated doses while avoiding nearby healthy tissue, including such critical structures as the bladder and rectum.

Other studies—including national, multi-institutional protocols, many conducted at MedStar Georgetown—indicate that CyberKnife is as effective as other radiation therapies for treating low-and intermediate-risk prostate cancer patients. Another shows that CyberKnife produces quality of life outcomes equivalent to or better than IMRT or seed therapy. As an added benefit, CyberKnife treatment is completed within only five visits.

Despite positive findings and results, MedStar Georgetown University Hospital continues to study CyberKnife to determine the best dosage levels and evaluate its long-term effectiveness. As such, MedStar Georgetown is one of only a few centers in the United States conducting clinical trials to advance knowledge of the technology and contribute to future developments.

Benefits of CyberKnife

- No pain
- Minimally invasive
- Little or no recovery time
- Only five treatments instead of 40 with other forms of radiation therapy
- Few or reduced side effects
- Fast, convenient and effective



Acclaimed Artist Receives World-Class Care

During a routine physical in 2006, David C. Driskell, then 75, learned he had prostate cancer. But with a PSA level of only 2.5, the most appropriate treatment for him was no treatment at all. So he and his doctors began a five-year period of active surveillance, regularly monitoring his prostate for changes.

That strategy worked well until 2011, when his PSA suddenly shot up to 9.

“My physician referred me to Dr. Sean Collins, a radiation oncologist at MedStar Georgetown,” says the renowned painter and scholar. “Dr. Collins explained the risks and benefits of various prostate treatments including CyberKnife, which I had never heard of before. In the end, he believed that CyberKnife might pose the least side effects for me.”

That pronouncement proved true, and also fit in with David’s busy international lecture schedule.

Near the end of February 2012, Dr. John Lynch, urology chair,



David Driskell in his Hyattsville, Maryland, studio

implanted tiny gold markers in the professor’s prostate. After five CyberKnife sessions with Dr. Collins, his treatment was complete. Today, his PSA levels continue to decline.

Concludes David, *“I’ve known many friends who ended up with problems they didn’t anticipate after their prostate treatments. But I never noticed any side effects. I’d urge anyone with prostate cancer to at least consider CyberKnife.”*

Other Options

Because every prostate cancer is unique, MedStar Georgetown University Hospital offers the best of established and emerging diagnostic and therapeutic approaches for the best results.

For example, MedStar Georgetown is one of the few sites in the area to use the UroNav biopsy system for greater visualization and enhanced accuracy in diagnosis and staging. The advanced technology fuses MRIs of the prostate with ultrasound-guided biopsy images in real time to accurately examine even abnormal areas detected by MRI. The system's exquisite precision eliminates or reduces the need for additional biopsies and tissue samples, and the attendant risk of infections, bleeding, pain and recovery time.

After an accurate diagnosis, our team will work with you to develop a personalized treatment strategy that fits your unique condition.



Dr. John Lynch, chair of urology, explains various treatment options to a prostate cancer patient.

Active Surveillance

For some men with low-risk, low-volume prostate cancer, the best treatment may be no treatment at all. This approach is most beneficial for older men whose PSA levels are less than 10, Gleason scores are 6 or less, and prostate biopsies note only a small amount of cancer. In such cases, urologists regularly monitor PSA levels and repeat biopsies every year or two. If subsequent findings suggest that the cancer is progressing, interventions may then be considered.

Radiation Therapy

In addition to CyberKnife, MedStar Georgetown offers other state-of-the-art radiation therapies.

One of the newest advances is RapidArc, a major step up from traditional Intensity Modulated Radiation Therapy (IMRT). Used in conjunction with Image Guided Radiation Therapy (IGRT), RapidArc (rotational radiation therapy) is administered after surgery to destroy any lingering cancer cells. RapidArc takes only a few minutes versus the 10 to 20 minutes required by IMRT. The difference is significant, since the prostate tends to shift position slightly during treatment, meaning that damaging rays may inadvertently strike more healthy surrounding tissue instead of the intended target. To compensate, RapidArc delivers higher levels of radiation—proven more effective at controlling tumors—in one continuous, quick 360° revolution around the body. Its speed and precision give radiation oncologists unlimited options to design more sophisticated and highly conformal treatment plans for each individual, with fewer side effects and less normal tissue damage.

Brachytherapy is internal radiation in which anywhere from 60 to 100 tiny radioactive seeds are placed in or near the tumor. The implantation only takes a single session; seeds then give off radiation continuously for approximately three months. MedStar Georgetown currently offers both low-dose brachytherapy using Palladium-103 and high-dose brachytherapy with Iridium-192.

Cryosurgery

Another viable option for some men is cryosurgery, a minimally invasive procedure which freezes and destroys cancerous cells with extreme cold. It is most often used for men with early-stage prostate cancer that is confined to the gland itself, or when other treatments have failed. Cryosurgery is also an alternative for men whose age or other medical conditions rule out surgery or radiation therapy.

Hormone Therapy

Hormone therapy is the standard of care for metastatic prostate cancer—cancer that has spread beyond the gland—as well as other advanced cancers or as a complementary treatment if prostate cancer returns. Unlike radiation and surgery, hormone therapy is not expected to cure the cancer; however, it can stop or even reverse the disease's progression.



At MedStar Georgetown, surgeons use the da Vinci Surgical System, described on page 4, to make delicate, tiny movements through incisions less than one-half inch long.

When first-line hormonal therapy fails to produce the desired result, new oral therapies such as ZYTIGA® and XTANDI® can help prolong life and its quality.

Radiopharmaceuticals

Xofigo, formerly in clinical trials at MedStar Georgetown and now a mainstream FDA-approved radiopharmaceutical treatment, is also available to prolong survival and delay symptoms for patients with advanced, hormone-resistant metastatic prostate cancer. Physician/researchers at MedStar Georgetown and the Lombardi Comprehensive Cancer Center are currently studying whether administering ZYTIGA or XTANDI in conjunction with Xofigo improves its effectiveness.

Immunotherapy

One of the most exciting developments in recent years is the advent of the immunotherapy vaccine Provenge[®], which prolongs survival for men with advanced cancer. The first in a new class of therapies that could change the way prostate cancer is treated, the drug retrains a man's white blood cells to recognize and destroy prostate cancer cells. MedStar Georgetown—through the Lombardi Comprehensive Cancer Center—participated in the pivotal clinical trials that led to Provenge's FDA approval in its current use as a frontline therapy.

Chemotherapy

For many years, prostate cancer was felt to be resistant to chemotherapy. However, there are now effective chemotherapy drugs such as Taxotere[®] and Jevtana[®] that can prolong survival by causing prostate cancer to regress. Taxotere is used first; should it fail, and a man's cancer progress, Jevtana, an injection, is then administered.



Urologist Dr. Keith Kowalczyk, a member of the prostate cancer team, reviews notes with a patient.

CyberKnife Patient Falls Asleep During Treatment

Over the years, Bill Flury has been called many names: systems engineer, consultant, teacher, writer, tennis player. But topping the list since 2008 is “prostate cancer survivor.”

Like others, Bill began his journey when a routine physical exam produced unusual results: His PSA counts were at potentially dangerous levels. When a follow-up biopsy confirmed prostate cancer, Bill’s urologist suggested a number of prostate cancer treatments. True to his training, Bill investigated them all before deciding that his best option was CyberKnife at MedStar Georgetown University Hospital.

“I was fascinated by CyberKnife, its incredible precision, efficiency and effectiveness. My whole treatment plan only required five outpatient visits, start to finish,” he says.

Bill was equally impressed by members of the MedStar Georgetown Prostate Cancer team, developing a special affinity for the radiology technicians.



Seven years after treatment for prostate cancer, Bill enjoys a full life.

“They were extremely helpful, making me feel comfortable right from the very beginning,” he says. “They even encouraged me to bring my own music to treatment sessions to help me relax.”

Their suggestion—along with CyberKnife’s whisper-quiet, minimally invasive, pain-free technology—worked. On more than one occasion, Bill just dozed off during treatment.

Today, the 83-year-old is still cancer-free, and going strong.

Clinical Trials

Physician/researchers at MedStar Georgetown University Hospital and its related Lombardi Comprehensive Cancer Center—one of only 41 comprehensive cancer centers designated by the National Cancer Institute—conduct basic, translational and clinical studies into all aspects of cancer. Their goal: solve the mysteries of disease origins and progression to improve detection and prevention efforts, refine current therapies and create better ones.

Through the Genitourinary Oncology Program, a number of clinical trials afford some men with prostate cancer the opportunity to receive the next generation of therapies months and even years before they are available to others. For example, the hospital was one of the few to study—and offer—radium-223 (Xofigo) before it received FDA approval for the treatment of advanced prostate cancer that has spread to the bones.

Current studies are looking at the effectiveness of new targeted therapies and at novel combinations of chemotherapies, hormones and radiopharmaceuticals.

Through more basic research, specialists are growing prostate cancer cell lines to gain understanding of the different genetic characteristics of each. Such information will help guide the future of cancer care: individualized medicine.

Prostate Cancer Survivor Still Flies the Skies

A retired United Airlines pilot with 34 years of service, John Quinn has always taken great care of himself. So when a routine physical exam revealed a disturbing prostate-specific antigen level, he quickly scheduled a biopsy. After the results confirmed prostate cancer, a friend told him about his own successful experience with the CyberKnife team at MedStar Georgetown University Hospital.

Following his friend's lead, John chose CyberKnife based upon its speed and efficiency. CyberKnife typically takes just five treatments versus the 40 required with traditional radiation, promising little or no interruption to his still-busy flight schedule.

"My CyberKnife therapy took less than an hour per treatment and was completely painless. What's more, it worked—I'm cancer-free," he says.

Despite retiring, John still finds himself in a cockpit virtually



Retired commercial pilot John Quinn now devotes his time to teaching and helping others.

"every day the sun is shining" as a flight instructor. He also flies 20 to 30 missions a year as a volunteer member of Angel Flight, a charitable organization of pilots who provide free air transportation for those with medical needs. It's John's way of giving back for a lifetime of good fortune and now better-than-ever health.

Facts About Prostate Cancer

Symptoms

In early stages, there are no noticeable symptoms of prostate cancer. Contact your doctor if you experience:

- Pain or burning during urination
- Difficulty stopping or starting urine flow
- Inability to urinate or weak urine flow
- Frequent urinations, especially at night
- Difficult erections
- Blood in the urine or semen
- Frequent pain in the lower back, hips or upper thighs

Risk Factors

- **Age:** Men ages 50 or older
- **Family history:** Sometimes hereditary, especially if father or brother had prostate cancer
- **Race:** African-American men are at a higher risk

Possible Risk Factors

- **Diet:** Heavy consumption of red meat and processed sugars
- **Lifestyle:** Obesity and lack of exercise

Screening Recommendations

Start annual screening at age 40 to 50, depending on risk factors. The screening tests available are physical exams or prostate-specific antigen blood tests.

Food for Thought

Research suggests it may be possible to reduce your risk by consuming:

- Pomegranate juice and, in moderation, red wine
- Tomatoes
- Mushrooms
- Cruciferous vegetables (broccoli, cabbage, kale) and allium (onions and garlic)
- Cold-water fish
- Soy (tofu and tempeh)

Get the Treatment You Need

To schedule an evaluation with one of our expert physicians or to speak to a healthcare professional, call MedStar Georgetown M.D., our free physician referral service. There, you can speak to a nurse counselor who can help answer your questions; put you in contact with the doctor who best meets your medical and personal needs; and even arrange your appointments. All MedStar Georgetown M.D. physicians are associated with MedStar Georgetown University Hospital.

Call **202-342-2400** or toll-free **866-745-2633**, Monday through Friday, 8 a.m. to 8 p.m. You can also visit our website at **MedStarGeorgetown.org/Urology** for more information.

Together, we can make the treatment decision that's right for you.



The Prostate Cancer Team at MedStar Georgetown University

Urology



John Lynch, MD
Chair, Department of Urology

Radiation Medicine



Anatoly Dritschilo, MD, FACR
*Chair, Department of
Radiation Medicine*

Hematology/Oncology



Nancy Dawson, MD



Gaurav Bandi, MD



Sean P. Collins, MD, PhD



Keith J. Kowalczyk, MD

MedStar Georgetown University Hospital is a not-for-profit, acute-care teaching and research hospital with 609 beds located in Northwest Washington, D.C. Founded in the Jesuit principle of *cura personalis*—caring for the whole person—MedStar Georgetown is committed to offering a variety of innovative diagnostic and treatment options within a trusting and compassionate environment.

MedStar Georgetown's centers of excellence include neurosciences, transplant, cancer and gastroenterology. Along with Magnet® nurses, internationally recognized physicians, advanced research and cutting-edge technologies, MedStar Georgetown's healthcare professionals have a reputation for medical excellence and leadership. MedStar Georgetown University Hospital—*Knowledge and Compassion **Focused on You.***

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