Hartford HealthCare
Tallwood Urology & Kidney Institute

OUTCOMES REPORT

HARTFORD HEALTHCARE
TALLWOOD UROLOGY & KIDNEY INSTITUTE
2021 OUTCOMES REPORT

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Hartford HealthCare
Tallwood Urology & Kidney Institute

Leadership at the Tallwood Urology & Kidney Institute

Steven J. Shichman, MD

Physician-in-Chief, Hartford HealthCare Tallwood Urology & Kidney Institute

A board-certified urologist, Dr. Shichman specializes in robotic surgery, renal cancer and adrenal disorders. After college and work as a chemical engineer, Dr. Shichman went on to complete his medical degree and general surgery and urology residency at the University of Connecticut. He pursued advanced training at New York Hospital and Cornell Medical Center, where he completed a fellowship in laparoscopy and minimally invasive surgery.

Dr. Shichman is a pioneer in minimally-invasive urologic surgery and is recognized internationally as a leader in the field. He is among the country's most experienced surgeons in laparoscopic adrenalectomy, as well as laparoscopic and robotic partial nephrectomy. As a course director for the American Urological Association postgraduate courses from 1998 to 2013, he taught laparoscopic techniques to more than 1,200 urologists from around the world. Dr. Shichman has been recognized as one of Connecticut's Top Doctors in urology by Connecticut Magazine and Hartford Magazine.

Over the past 25 years, Dr. Shichman has been instrumental in advancing Hartford HealthCare's international reputation for innovation in laparoscopic and robotic urologic surgery. Under his leadership, Hartford HealthCare has hosted numerous post-graduate courses in minimally-invasive surgery, including national symposiums on robotic urologic surgery. Dr. Shichman is also the executive director of Hartford Hospital's Center for Education, Simulation and Innovation, which is recognized as one of the largest and most comprehensive medical simulation training complexes in the United States.

Jan Ruderman

Vice President, Hartford HealthCare Tallwood Urology & Kidney Institute

In her role as vice president of Hartford HealthCare's Tallwood Urology & Kidney Institute, Ruderman is responsible for engaging stakeholders from across Hartford HealthCare's continuum of care to fulfill our vision of being nationally respected for excellence in patient care and most trusted for personalized coordinated care. She oversees and drives strategic initiatives of the Tallwood Urology & Kidney Institute to improve quality, reduce cost and inefficiencies, and enhance the patient experience.

Ruderman was an architect in the development of our institute model, which redesigned our healthcare delivery model to better coordinate care with evidence-based, system-wide standards of care. Tallwood Urology & Kidney Institute is one of six Hartford HealthCare institutes which organizes care around diseases and patient needs, rather than siloed departments seen in traditional care delivery models.

Ruderman has a master's degree in business administration with a focus on healthcare, and a bachelor's degree in occupational therapy from Tufts University. During her 20-plus years at Hartford HealthCare, she has held a variety of leadership roles in operations, quality and process improvement.

About Hartford HealthCare

Hartford HealthCare is Connecticut's most comprehensive healthcare network. Our fully integrated health system includes a tertiary-care teaching hospital, an acute-care community teaching hospital, an acute-care hospital and trauma center, two community hospitals, the state's most extensive behavioral health services network, a large primary care physician practice group, a regional home care system, an array of senior care services, and a large physical therapy rehabilitation network. The Hartford HealthCare Cancer Institute provides coordinated care across five cancer centers and is the charter member of the Memorial Sloan Kettering Cancer Alliance.

Today, Hartford HealthCare is creating a better future for healthcare in Connecticut and beyond. We are a community of caregivers engaged in developing a coordinated, consistent high standard of care. We use research and education as partners in care delivery. We create and engage in meaningful alliances to enhance access to services. We invest in technology and training to develop new pathways to improve the timeliness, efficiency and accuracy of our services.

Our Values

Caring: We Do the Kind Thing

Every Hartford HealthCare colleague touches the lives of the patients and families in our care. We treat those we serve and each other with kindness and compassion and strive to better understand and respond to the needs of a diverse community.

Equity: We Do the Just Thing

We commit to the fair treatment, access, opportunity and advancement for all. We value the uniqueness of each person and embrace diverse backgrounds, opinions and experiences. We foster intellectual, racial, social and cultural diversity and treat everyone with dignity and respect. Our customers, patients and colleagues experience Hartford HealthCare's culture of belonging.

Excellence: We Do the Best Thing

In Hartford HealthCare, only the best will do. We work as a team to bring experience, advanced technology and best practices to bear in providing the highest-quality care for our patients and families. We devote ourselves to continuous improvement, excellence, professionalism and innovation in our work.

Integrity: We Do the Right Thing

Our actions tell the world what Hartford HealthCare is and what we stand for. We act ethically and responsibly in everything we do and hold ourselves accountable for our behavior. We bring respect, openness and honesty to our encounters with patients, families and coworkers and support the well-being of the communities we serve.

Safety: We Do the Safe Thing

Patients and families have placed their lives and health in our hands. At Hartford HealthCare our first priority, and the rule of medicine, is to protect them from harm. We believe that maintaining the highest safety standards is critical to delivering high-quality care and that a safe workplace protects us all.

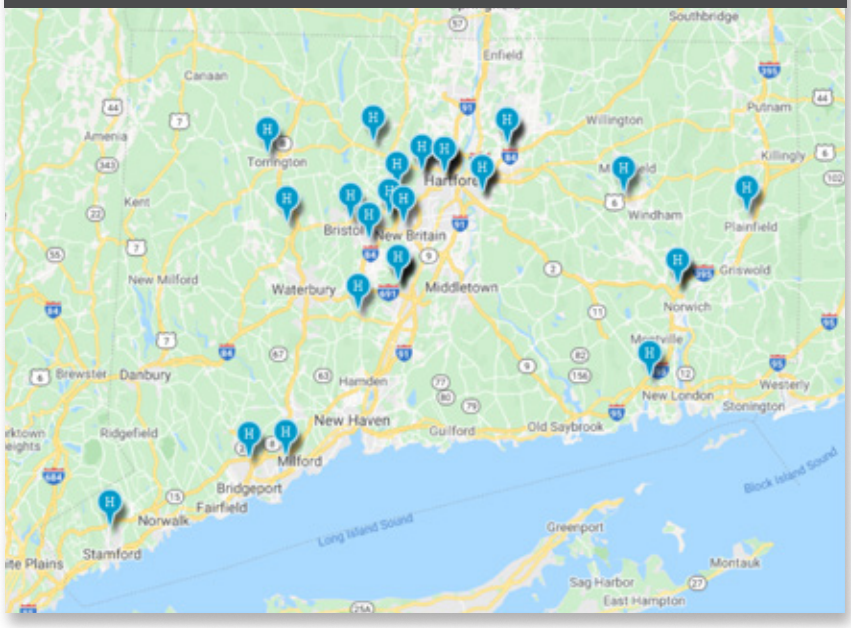
About the Tallwood Urology & Kidney Institute

Hartford HealthCare Tallwood Urology & Kidney Institute was established in 2015 to provide oversight of the complete patient experience throughout all transitions of care and points of service within Hartford HealthCare for individuals being treated for urologic and kidney conditions. Our innovative institute approach is unlike any other in the state and is among the most highly regarded in the nation. Foundational to the institute model are our clinical councils which are comprised of physicians and other clinicians with expertise in specific diseases and conditions. The clinical councils support our commitment to ensure best practices are applied throughout our system so patients receive the same high standard of care no matter where they live or which Hartford HealthCare facility they choose.

The Tallwood Urology & Kidney Institute maintains 20 outpatient locations across Connecticut. Our expansive network of highly talented and extensively trained providers at these locations allow communities greater access to care across all specialties and sub-specialties. If necessary, and in addition to our rapidly growing outpatient network, urologic and kidney conditions are treated at the following Hartford HealthCare acute care facilities across the state:

- **Backus Hospital**
- **Charlotte Hungerford Hospital**
- **Hartford Hospital**
- **The Hospital of Central Connecticut**
- **MidState Medical Center**
- **St. Vincent's Medical Center**
- **Windham Hospital**

Urology practices across the state



Hartford HealthCare
Tallwood Urology & Kidney Institute

The Tallwood Urology & Kidney Institute is organized around five clinical councils

Clinical councils bring providers and leadership together to establish medical guidelines and standards of care that reduce variability, improve quality and outcomes, and enhance the patient experience.

Furthermore, our councils examine gaps in care and explore growth opportunities to better serve our communities.

Men's Health Introduced in 2018 under the direction of andrology trained urologist, Dr. Jared Bieniek, Tallwood Men's Health launched with a new and innovative model of care designed specifically for men. The service is built around a multidisciplinary and clinically-integrated team of specialists in urology, endocrinology, cardiology, behavioral health, medical and surgical weight loss, sleep medicine, colorectal health and geriatric medicine. A nurse navigator supports the team to help reduce access barriers to care and ensure men receive a more holistic approach to managing their health.

Kidney Stones Under the leadership of Dr. Joshua Stein, Tallwood urologists and nephrologists partner with other Hartford HealthCare specialists such as radiologists, registered dietitians and emergency care providers, to develop clinical guidelines and protocols that improve the way we care for those suffering from kidney stones. Performing procedures such as shock wave and laser lithotripsy, ureteroscopic stone removal and percutaneous nephrostomy, Tallwood leads the Connecticut market by treating nearly 2,500 stone transitions of care annually, all while outperforming national benchmarks in readmissions and length of stay.

Pelvic Health Co-led by female pelvic medicine reconstructive surgeons, Drs. Richard Kershen and Christine LaSala, Tallwood urologists and urogynecologists are recognized as regional and national leaders in their fields. Many have pioneered treatments that have become the gold standard of care nationwide. Extending care to the outpatient setting, Tallwood enlists Hartford HealthCare specialty-trained physical therapists to help patients better manage pelvic pain and pelvic floor conditions including female and male incontinence. Our expertise and vast experience means we can help, even when previous treatments or surgeries have been unsuccessful. For this reason, we are a primary referral center for Connecticut and southern New England.

Genitourinary Oncology Tallwood's urology oncology team, also part of the Hartford HealthCare Cancer Institute and charter member of the Memorial Sloan Kettering Cancer Alliance, treats all urologic cancers including adrenal, bladder, kidney, penile, prostate and testicular. The team also gives these patients access to state-of-the-art treatment and opportunities to participate in clinical trials closer to home. Under the direction of Dr. Anoop Meraney, Tallwood is the market leader in Connecticut for urologic cancer.

Chronic Kidney Disease Our kidney care team, led by board-certified nephrologist Dr. Jarrod Post, is committed to providing advanced care for individuals with chronic kidney disease. Our multidisciplinary team includes representatives from urology, nursing, care management, dialysis, nephrology, hospital medicine, nutrition, radiology and transplant surgery. With a focus on getting patients into treatment as early in their disease process as possible, the goal is to have them realize better outcomes, which results in higher quality of life and dramatically better survival rates.

The Tallwood Urology & Kidney Institute's provider network continues to grow

At the Tallwood Urology & Kidney Institute, we provide world-class urology and kidney care with a team of regional and national leaders in their fields. Many patients who have not had success with other treatments come here for the best solutions to even the most frustrating urology problems. Our highly-skilled physicians have advanced sub-specialty training, and are backed by a full team of interdisciplinary medical and surgical specialists. With our wide network of care, you get the very highest standard of treatment conveniently delivered close to home. Over the past year, Tallwood has added six providers to expand our reach and increase access to care. Please welcome the following providers, with their locations:

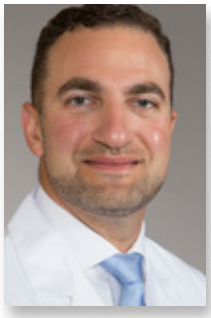
Cynthia Leung, MD
Speciality: **Urology**
Region: **Hartford**

Milton Armm, MD
Speciality: **Urology**
Region: **Fairfield**

Jeffrey Ranta, MD
Speciality: **Urology**
Region: **Fairfield**

James Rosoff, MD
Speciality: **Urologic Oncology, Urology**
Region: **Fairfield**

Keith O'Brien, MD
Speciality: **Urology**
Region: **Fairfield**



Joshua Stein, MD
Speciality: **Urology**
Region: **Hartford**

Fairfield Region Growth

Hartford HealthCare and the Tallwood Urology & Kidney Institute increased access to our specialists in the Fairfield Region, opening three practices in Bridgeport, Stamford and Milford to allow our providers to engage more patients in Fairfield County. In addition, St. Vincent's Medical Center in Bridgeport provides an acute care setting for providers to accommodate patient inpatient and surgical needs.

The Tallwood Urology & Kidney Institute is proud to bring a team of specialty-trained physicians closer to residents of Fairfield County so we can help improve their health and healing.

Statistical Highlights

Hartford HealthCare Tallwood Urology & Kidney Institute is the overall market leader in Connecticut for urology and kidney disease. As such, patients seek us out for care, helping system-wide market share increase year over year in specialty areas like urologic cancer, men's health, kidney stones, chronic kidney disease and pelvic health and incontinence.

During the COVID-19 pandemic, we continued to deliver high-quality care to our patients. The patient volumes listed below represent inpatient and hospital outpatient ambulatory surgery in fiscal year 2020.

99,940
arrived visits
(25 percent of all specialty visits in the Hartford HealthCare Medical Group)

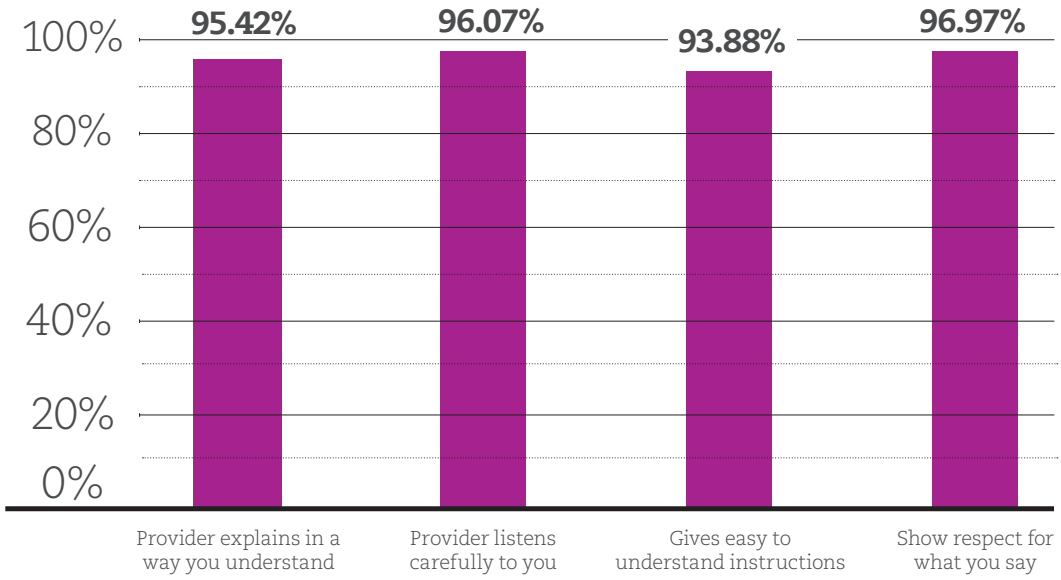
11,535
episodes of care
(in hospital-based settings)

8,207
surgeries

Effective Communication Puts Patients' Concerns First

With high volume comes added opportunities for our physicians to interact with more patients. The experience and engagement of our physicians in complex, and routine procedures and visits also mean better outcomes for patients. When a patient visits a Tallwood office, providers present information and recommendations in a way the patient understands, listen carefully, provide clear instructions and show respect for what the patient has to say. Patient survey results around effective communication demonstrate this commitment to patient experience.

Communication Survey of Patients under the Care of a Tallwood Provider

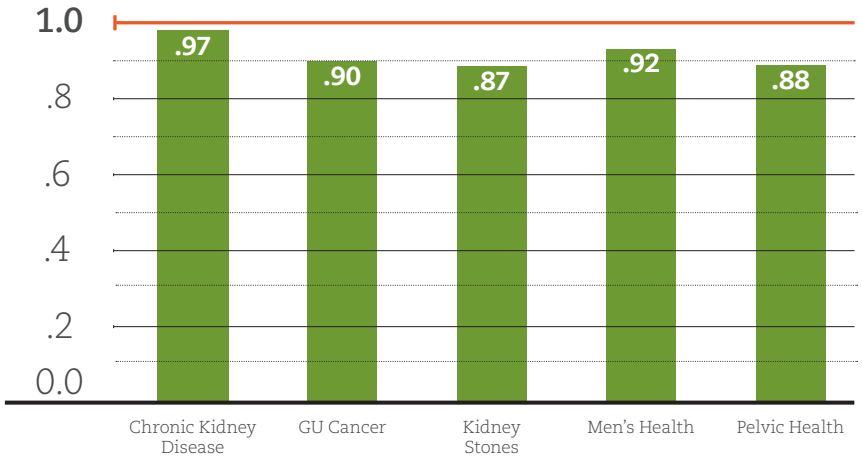


Source: CAHPS, FY2020

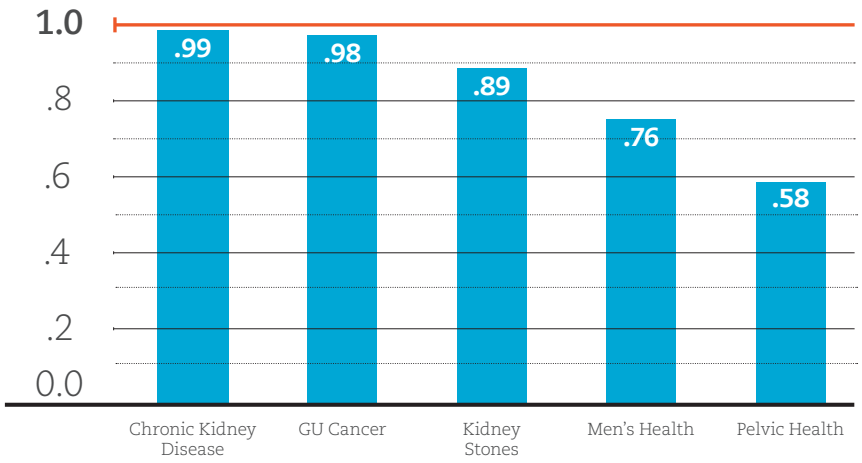
Complication Rates

Despite the complexity of our cases, our readmission and length of stay rates for inpatient care, listed below, are still better than expected. With a safe decrease in length of stay, patients can return to their home and daily activities while staying connected to care through their physicians' practice.

Length of Stay Observed/Expected <1 is Better than Expected



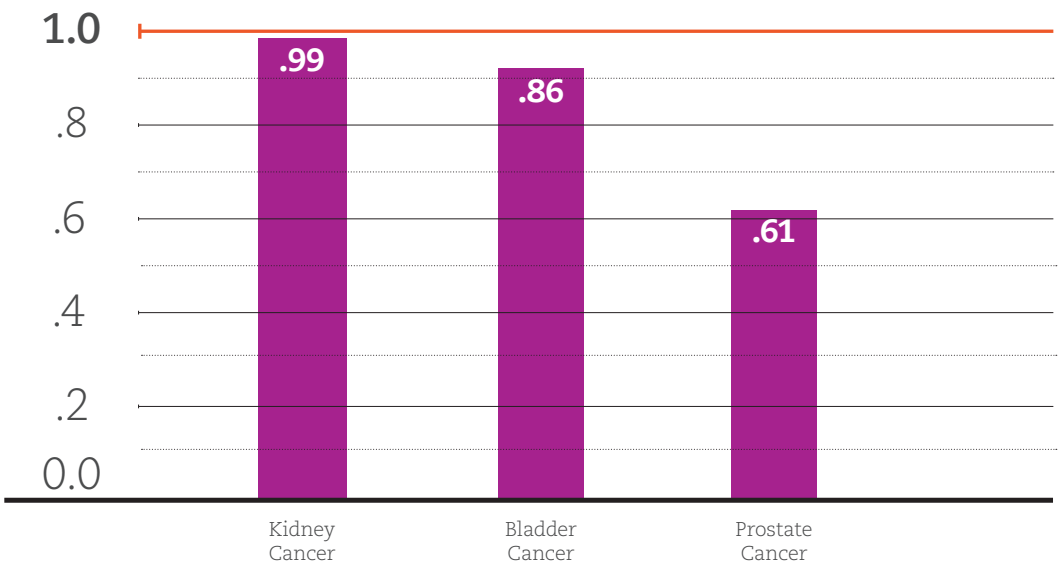
Readmission Observed/Expected <1 is Better than Expected



Source: Premier Outcomes, FY2020

Hartford HealthCare Tallwood Urology & Kidney Institute, in collaboration with the Hartford HealthCare Cancer Institute, is a tertiary referral center for Connecticut and New England. Our team of fellowship-trained urologists, nephrologists, medical oncologists and radiation oncologists care for the most complex cancer cases. Our focus on establishing clinical standards of care through the Genitourinary Oncology Clinical Council has resulted in achieving better-than-expected complication rates for to urologic cancer care, demonstrating a continued focus on patient safety even during a pandemic.

Complication Rate Observed/Expected <1 is Better than Expected



Source: Premier Outcomes, FY2020

Program Development & Highlights

Men's Health

Tallwood Men's Health has made tremendous strides toward improving the health of the men in our communities by identifying their unique needs. For example, men are nearly 1.4 times as likely to die from almost every chronic medical condition. As in all of healthcare, it was important that we shift the paradigm to treating the whole man and not simply addressing illness and disease when needed. With locations in Farmington and Waterford, the Tallwood Men's Health team is fulfilling their vision of providing leading-edge, multidisciplinary care to men in comfortable, accessible settings. We have also partnered with other Hartford HealthCare specialists and community providers who have an understanding of male-specific disease processes.

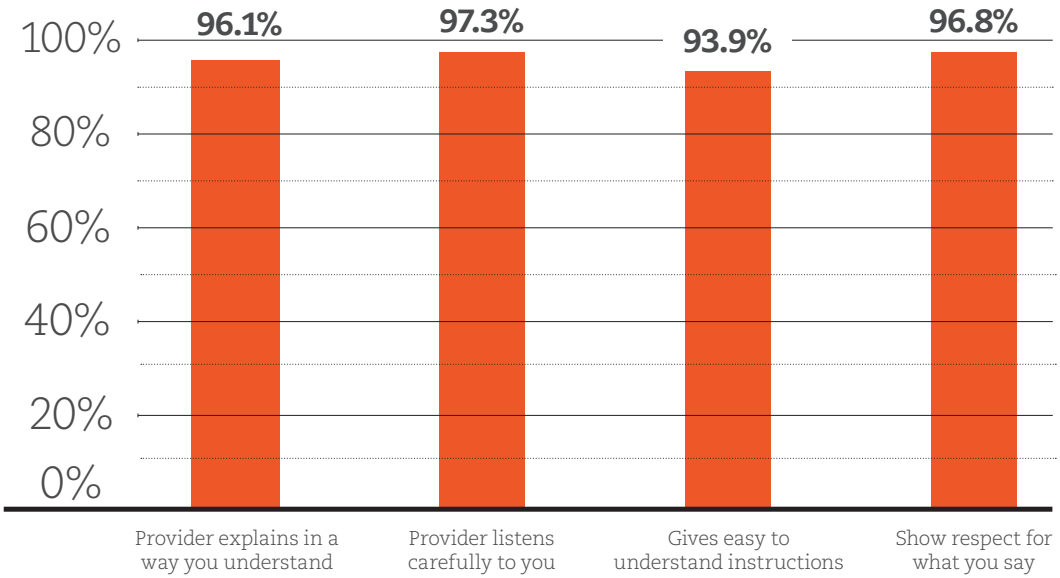
This comprehensive service line includes experts in:

- Behavioral health
- Cardiology
- Colorectal health
- Endocrinology
- Geriatric medicine
- Sleep medicine
- Urology
- Medical & surgical weight loss

"We believe New England men deserve the highest level of care. We want to see men live healthier, longer lives. That's our mission at Tallwood Men's Health," said Medical Director Dr. Jared Bieniek.

Tallwood Men's Health programs served more than 43,000 unique male patients in the past year. Our success is supported by provider communication scores from Consumer Assessment of Healthcare Providers and Systems (CAHPS).

Communication Survey of Patients under the Care of a Tallwood Men's Health Provider



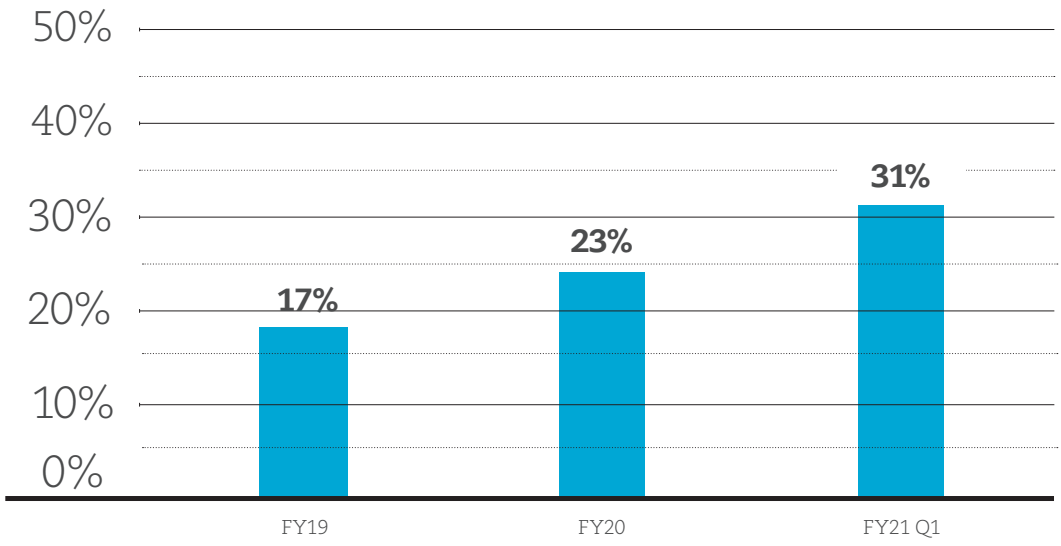
Source: CAHPS, FY2020

Tallwood Kidney Stone Center

The Tallwood Urology & Kidney Institute team recognizes that kidney stones affect 1 in 11 Americans and can develop anywhere in the urinary tract, causing a myriad of troublesome symptoms. The Kidney Stone Center was developed as an innovative approach to care for this condition. A multidisciplinary group of urologists, nephrologists, dietitians and interventional radiologists collaborate to address kidney stones. Effectively, leading to better outcomes. This personalized approach earns high praise from our patients, who, according to Press Ganey survey results, give us high scores for "communication with doctor," "doctors listen to you" and "overall rating of care."

In addition, our clinical outcomes for kidney stones rank above national benchmarks in such areas as length of stay and hospital readmission rates. Since the creation of our Tallwood Kidney Stone Center, we've seen increased coordination rates with Hartford HealthCare emergency departments year over year (see below).

Kidney Stones Emergency Department Coordination Rate
Number of ED Stone Patients Seen in HHC Urology Office for Stones within Two Weeks of ED Discharge



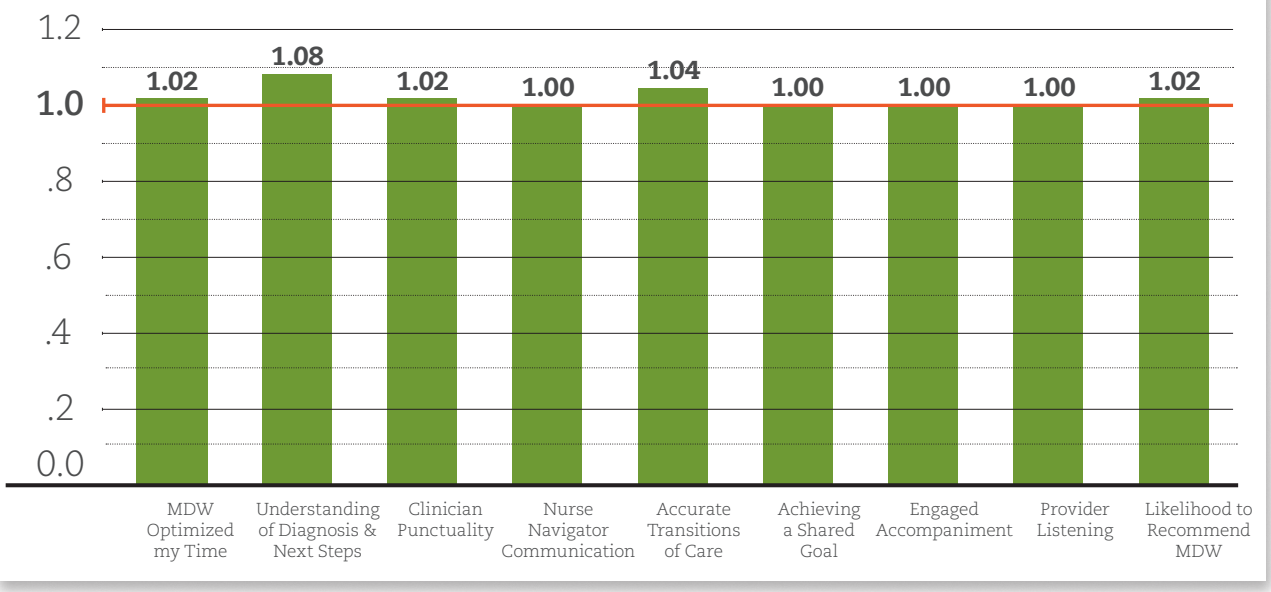
Multidisciplinary Prostate Cancer Virtual Visits

To help newly-diagnosed prostate cancer patients learn about treatment options from multiple providers without having to leave the safety of their homes in the era of COVID-19, Hartford HealthCare piloted nurse navigator–driven multidisciplinary prostate cancer virtual visits (MDVV). Patients can now participate in a virtual consultation with a multidisciplinary team of urologists, radiation oncologists, medical oncologists and a nurse navigator.

As patients complete the session, they understand their treatment options and, with the nurse navigator, can begin to take the next steps toward their treatment goals. Patients participating in these sessions overwhelmingly report a high level of satisfaction with the "clarity of communication" and "coordination of care."

Multidisciplinary Virtual Visit Patient Experience

Patients rating on a likert scale from 1-5. 1 being strongly agree, 5 being strongly disagree. **1 is the best outcome**



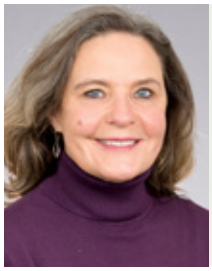
Nurse Navigators

Nurse navigators serve as both educators and advocates for patients, easing some of the logistical complexities of modern healthcare. They assure our patients get the coordinated care they deserve, making their healthcare journey as easy and streamlined as possible.

Tallwood nurse navigators perform a variety of tasks, making a difference in our patients' lives each day. These include:

- Assisting with the coordination of care and services
- Providing support and education throughout a patient's journey.
- Helping to schedule appointments for initial consultations and follow-up visits with other healthcare providers.
- Acting as a professional resource and liaison between healthcare providers, patients and families.
- Providing consistent contact for patients and families throughout diagnosis and treatment.
- Advocating for patients and helping them navigate the complex healthcare process.
- Serving as a resource and consultant for patients, and developing a presence in local communities.

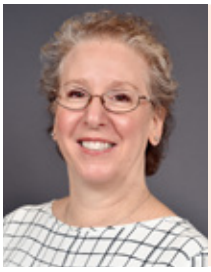
Kimberly Diamond
Hartford County
Councils
Men's Health, Kidney Stones



Mary Porter
Southwest & Northwest Connecticut
Councils
Urologic Oncology, Kidney Stones

Susanne Carrier
Hartford County
Councils
Urologic Oncology

Rachael Rheaume
Central Connecticut
Councils
Urologic Oncology, Kidney Stones



Bethany Buckridge
Eastern Connecticut
Councils
Men's Health, Kidney Stones

Program Development & Highlights

Webinars

Educating our community is a cornerstone of Tallwood. We believe that educated communities are better able to take the necessary steps to seek the support and care that they need. Even in the face of global distress, it was important to educate people in our communities about pressing urologic and kidney-related information. At the onset of the COVID-19 pandemic, the team fully transitioned educational classes to a virtual/online platform. We provided more than 25 community education events this year based on key information provided by our clinical council members.

Highlights are:

- Erectile Dysfunction: Restoring Intimacy
- Life after Prostate Cancer Treatment: Continence and Sexual Function
- Management of the Enlarged Prostate
- Men & Mental Health: Breaking the Silence
- Men's Health: Questions You're Afraid to Ask
- Men's Health Webinar: How to Safely Navigate Dietary Supplements
- Minimally-Invasive Surgical Options for Prostate Cancer
- Multidisciplinary Approach to Prostate Cancer Care
- Nutrition Matters: Bladder Cancer
- Prostate Cancer and Genetics
- Radiation Oncology & Urology: Treating Prostate Cancer Together
- The What, Why & How of Low Testosterone
- Understanding Chronic Kidney Disease
- Understanding Kidney Cancer
- Urinary Incontinence in Women
- Understanding PSA Testing & Prostate Cancer

Philanthropy

Even in the trying times of the COVID-19 pandemic, the Hartford Healthcare Tallwood Urology & Kidney Institute continued to partner with ZERO Prostate Cancer, a national not-for-profit organization dedicated to eliminating prostate cancer through awareness, research and education. Although our annual ZERO Prostate Cancer Run/Walk awareness event was held virtually last year, the partnership amassed more than $42,000 to help end prostate cancer. Proceeds are used for monthly education events so we can work with community members to be more health-conscious and understand the warning signs of different illnesses.

The Gelfenbien family generously contributed to the Tallwood Urology & Kidney Institute over the past year, allowing us to begin piloting use of a pelvic health nurse navigator to help patients navigate the healthcare system and get the care they need through our Pelvic Health discipline. The Gelfenbien family also generously contributed funds that provide academic scholarships to Tallwood colleagues seeking to advance their career.

In addition, the Tallwood Urology & Kidney Institute team is incredibly grateful for all the donations received over the past year. Monies are used for community outreach, provider education and other operational items needed to serve our communities at the highest level.

Al Grady

Al Grady learned the hard way that when the prostate swells, it cuts off the flow of urine. “I just could not urinate,” the 59-year-old Hartford man said.

The situation got so bad that he twice found himself in the emergency room, having a catheter inserted to drain his bladder. He was referred to Dr. John Griffith, a specialist in benign prostatic hyperplasia (BPH) with the Tallwood Urology & Kidney Institute.

He learned that many older men develop BPH, in which an enlarged prostate presses on the urethra and slows or stops urination. “It’s an amazing team,” Grady said. “These doctors are great.”

Dr. Griffith suggested surgical intervention through a transurethral resection of his prostate after medical therapy was unsuccessful in allowing him to urinate on his own again. This is a minimally-invasive procedure to remove the prostate tissue causing obstruction of the urine stream.

Grady underwent the outpatient procedure on June 1, 2021, and noticed improvement a week later when the catheter was removed. He remains without any symptoms and emptying his bladder well. “I was immediately able to go again,” he said.

While telling the story of his experience isn’t easy for Grady, he said men need to hear the stories of others to know they’re not alone and to seek the care they need. It’s especially important for African American men like him who are disproportionately more likely to develop prostate disease and less likely to seek medical attention. “Men are not educated enough about these things,” Grady noted. “Getting the information out to more men could be very helpful. It’s just not a topic of discussion.”

He figured most men feel like he did – that it would never happen to them. A forensic tech supervisor with the state Medical Examiner’s Office, Grady said he spends his days performing autopsies and seeing sickly organs.

“I’m inside bodies all day, but I never thought it could happen to me,” the father of one said.

In fact, Dr. Griffith said BPH is diagnosed in about 3 million American men each year “Studies have demonstrated that African American men are about half as likely to be diagnosed with BPH and even when diagnosed, they are less likely to pursue therapy than white men. It is important for men to understand that these symptoms are quite common as they age and that we have a wide array of treatment options ranging from conservative management strategies, to medical therapy, to finally surgical procedures when necessary to alleviate these problematic symptoms,” he said. While Grady’s case was severe, Dr. Griffith said other cases can be treated with medication to relax the bladder or shrink the prostate.

It’s an amazing team. These doctors are great.

Anthony Santacroce

Not much intimidates Anthony Santacroce, but a diagnosis of kidney cancer in his mid-50s and the prospect of the first surgery he'd ever had in his life came really close. The alternative to surgery wasn't very appealing, either.

Santacroce, who is now 66, credits his primary care provider for investigating the cause for his fatigue and anemia. Several rounds of tests finally yielded a referral to a urologist who revealed he had cancer in both kidneys, news that stunned the Burlington trial attorney. The prognosis without surgery was grim and he thought about his 12-year-old daughter, an only child.

"I was not afraid of dying as much as I was afraid she wouldn't have her dad," he said quietly.

Serendipity and a friend of a friend got him an appointment with Dr. Steven Shichman, physician-in-chief of the Tallwood Urology & Kidney Institute, for a second opinion. Santacroce and his wife, also an attorney, decided quickly that he would stay with Dr. Shichman for his care.

Unfortunately, due to the size of the tumor in Santacroce's right kidney, the entire kidney needed to be removed. The hope was that the cancer in the left kidney could be removed successfully while preserving enough normal kidney tissue to allow him to continue life without dialysis.

Dr. Shichman removed the right kidney using a minimally-invasive approach and, two months later, removed the left kidney tumor robotically. Enough kidney function was preserved that the hospital stay was short and the recovery rapid.

"He had enough confidence to say 'I'm going to operate and you're going to feel like a new man,'" he recalled. "He's a very personable and likeable guy, in addition to being a great surgeon. I'm probably healthier now than I ever was!"

After his two surgeries, Santacroce was referred to a nephrologist for monitoring of the remaining kidney. In the process, he made several lifestyle changes, including adopting a vegetarian lifestyle. Animal-based proteins like meat and fish, he explained, require more work from the kidney so he limits his intake to a bite of turkey on Thanksgiving or a nibble of salmon periodically.

Other than that, the only real reminder of his kidney cancer is an annual ultrasound and MRI, plus visits with Dr. Shichman and the nephrologist to monitor his kidney function.

"I couldn't have hoped for a better result. When I'm asked about urologists, I always recommend Dr. Shichman. As far as I'm concerned, he walks on water!" Santacroce said.

He's a very personable and likeable guy, in addition to being a great surgeon.

Lynette Valentine

Lynette Valentine avoided prolapsed surgery for years, using a pessary medical device to keep her uterus and bladder from protruding from her vagina.

The pessary helped the 57-year-old Meriden mother function for more than 14 years, fixing a problem she attributes to giving birth to two large babies, now ages 18 and 15, and the strain the pregnancies put on the ligaments holding her organs in place.

Every day, she'd faithfully insert the ring-like device and the upward pressure it provided would fight the pull of gravity and the resulting organ prolapse.

"It definitely impacted my life. I couldn't run, couldn't bend over without it falling out," Valentine says, adding that she felt the pessary never fit properly. "It would even come out when I had a bowel movement."

But, she adjusted to every challenge, even the intense cleaning the device required. When the downward movement of the organs began to affect her urinary continence, however, her healthcare provider referred her to Dr. Elena Tunitsky, a specialist with the Hartford HealthCare Tallwood Urology & Kidney Institute.

After explaining that she needed a procedure called a laparoscopic sacrocolpopexy designed to re-support the vaginal support that holds the bladder and the rectum in place in her pelvic cavity, Dr. Tunitsky offered Valentine the option of having laparoscopic or transvaginal surgery. On February 4, she went into the hospital for the former and spent just one night before going home with a renewed sense of life. It's been wonderful—like I never had a problem before! she says. I should have done this a long time ago!

Several months after the procedure, Valentine says she feels able to do almost anything. Yard projects like reseeding the large lawn would have normally been relegated to her husband because she needed to avoid the lifting and swift movements. But, this summer she says she was right beside him, toiling at the project for hours. "I'm so grateful to Dr. Tunitsky!" she says.

> *It's been wonderful—like I never had a problem before! I should have done this a long time ago!*

Bob Wade

During a second hospitalization for pulmonary embolisms in the midst of the pandemic, Bob Wade's discharge was briefly interrupted by a urologist stopping by his room to discuss a three-centimeter spot she'd spotted on his right kidney.

The conversation, according to the 72-year-old semi-retired financial advisor from Portland, launched a second serious health experience for him.

The urologist explained that the spot was small enough at the time that he could choose to work with medical providers to monitor it for any growth, or consider having it surgically removed, either the spot itself or the entire kidney. Although a follow-up visit a few months later revealed that there had been no growth, Wade accepted referrals to three area specialists for second opinions.

After some research and a brief introductory meeting, he chose to work with Dr. Anoop Meraney, director of urologic oncology with the Hartford HealthCare Tallwood Urology & Kidney Institute, who explained the disease and every option, using charts and photos as illustrations when appropriate. He even had the opportunity to consult with specialists at the Mayo Clinic but decided to stay local.

"I chose him because of his style. I immediately had confidence in him," Wade said, noting that Dr. Meraney's suggestion was to remove the kidney, although he stressed that it was the patient's ultimate decision. "I told him I've been an athlete all my life and I always listen to the coaches. He was like the coach here. He was calm, gave me good instructions and he was comforting to my wife."

Scheduling surgery was tricky, Dr. Meraney explained, because Wade's history of pulmonary embolisms required a regimen of blood thinners. In July 2021, after a last pre-surgical appointment with Dr. Meraney at which "he told me exactly what he was going to do," Wade was admitted to Hartford Hospital for the nephrectomy, a complete removal of his kidney.

The surgery and recovery went smoothly, and Wade has returned to all of his activities with his remaining kidney.

The entire experience, he noted, is a tribute to the professionalism and compassion of the entire team, both in and outside of the hospital. "It goes way beyond the doctors – it was the nurses, the nutritionist, everyone," Wade said. "I really felt they cared. I call it 'quality, competent care.'"

The father of two daughters and grandfather of four said the surgery has barely slowed him down. He and his wife continue to golf, travel, hike and socialize with their large group of friends. "I told Dr. Meraney before the surgery that I want to live to be a ripe old age because I have a lot of things left to do," Wade said. "And, just look what medicine can do! Life goes on."

The entire experience, is a tribute to the professionalism and compassion of the entire team…

Publications

Baber J, Staff I, McLaughlin T, Tortora J, Champagne A, Gangekhedkar G, Pinto K, Wagner J. Impact of Urology Resident Involvement on Intraoperative, Long-Term Oncologic and Functional Outcomes of Robotic-Assisted Laparoscopic Radical Prostatectomy. Urology. 2019 Oct;132:43-48. doi: 10.1016/j.urology.2019.05.040. Epub 2019 Jun 20.

Boyd SS, O'Sullivan D, LaSala C. Evaluating Postoperative Morbidity in Patients Undergoing Pelvic Reconstructive Surgery Using the American College of Surgeons National Surgical Quality Improvement Program Surgical Risk Calculator. Female Pelvic Med Reconstr Surg. 2020 Jun;26(6):364-369. doi: 10.1097/SPV.0000000000000715.

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Amin R, Bieniek J, and Neuber E. Novel Mobile-Enhanced Point-of-Care Testing for Comprehensive Male Fertility Assessment." Virtual podium presentation at NEAUA Annual Meeting, September 10, 2020.

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Glaser G, Miller K, Bevis KS, Howe C, Wohlrab K, Sung V, Richter H, Lokich E, McCourt CK, Glaser GE, Brown AK, Wethington S, Carlson MJ, DiSilvestro PA, Lowder JL, Rahn DD, Occhino JA, Dunivan G, Tunitsky E, Chen G, Luis C, Raker C, Clark M, Robison K. Opportunities to Improve Sexual Health and Quality of Life in Endometrial Cancer Survivors." Society of Gynecologic Oncology, 2019. (Presented by co-investigator.)

O'Meara A, Ramaseshan AS, Tunitsky-Bitton E. Development and validation of a Vaginal Anterior Repair Simulation Model for Surgical Training. Presented at American Urogynecology Society annual meeting. Nashville, TN, Sept 2019, and Association of Professors of Gynecology and Obstetrics annual meeting, Orlando, FL, March 2020. (Presented by a mentee.)

Ramaseshan A, Tunitsky-Bitton E, Wang, R. National Trends in Uterine Preserving Reconstructive Procedures: Hysterectomy versus Hysteropexy at the Time of Apical Auspension. Presented at American Urogynecology Society annual meeting, virtual 2020. (Presented by a mentee.)

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Research Highlights

Involvement of residents in robotic-assisted laparoscopic radical prostatectomy does not compromise safety or quality.

The involvement of residents in surgical procedures is key to ensuring that they leave their programs with the competence and confidence needed to succeed in the surgical arena. With changes in resident work hours and supervision, and intensified focus on quality outcome measures, the impact of resident involvement on surgical quality has been a topic of increased focus. Several studies have indicated that resident involvement in urologic surgery is associated with lengthened operative times but not increased complication rates, reoperations, readmissions or any differences in functional, short-term oncological outcomes.

In an effort to further evaluate the impact of resident involvement in urological surgery - specifically robot-assisted radical prostatectomy (RALP) on oncologic, functional and intraoperative outcomes – Dr. Joseph Wagner and his team retrospectively reviewed the Hartford Hospital Prostate Cancer Registry to identify 460 patients who underwent RALP from November 20, 2007 to December 27, 2016. They analyzed cases performed by one surgeon on a specific day of the week when the morning case involved at least one resident (R; N=230) and the afternoon case involved the attending physician only (nonresident [NR]; N=230). While median operative time (OT) was significantly longer for R versus NR (200 minutes versus 156 minutes, P<.001), a similar observance with robotic time (161 minutes versus 119 minutes, P<.001), the groups did not differ on any oncological or clinical outcome, including margins, complications up to 90 days, biochemical recurrence and one-year potency and continence.

Results support the involvement of residents in RALP as neither safety nor quality was compromised. The study was unique in that it presented long-term oncologic outcomes while controlling for variables that can affect OT, such as variation in anesthesiology staff, nursing staff and bedside assistants.

Baber J, Staff I, McLaughlin T, Tortora J, Champagne A, Gangekhedkar G, Pinto K, Wagner J. Impact of Urology Resident Involvement on Intraoperative, Long-Term Oncologic and Functional Outcomes of Robotic-Assisted Laparoscopic Radical Prostatectomy. Urology. 2019 Oct;132:43-48. doi: 10.1016/j.urology.2019.05.040. Epub 2019 Jun 20.

The American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) surgical risk calculator is a poor predictor of outcomes after pelvic reconstructive surgery.

Surgical risk calculators can help surgeons identify patients at increased risk for complications leading to better outcomes after surgery. The American College of Surgeons National Surgical Quality Improvement Program developed a surgical risk calculator using a cohort of more than 1.4 million patients to predict outcomes of specific procedures within 30 days of surgery.

In a retrospective chart review of 731 cases, Drs. Sarah Boyd, David O'Sullivan and Christine Lasala evaluated the ability of this tool to predict outcomes from pelvic reconstructive surgery. Preoperative risk factors were abstracted from medical records and entered into the ACS NSQIP surgical risk calculator. The Current Procedural Terminology code that produced the largest risk was used and compared with actual patient outcomes. Two hundred twenty-one (30.3 percent) experienced "any serious complication," with 89 percent of these due to urinary tract infection. Incidence of urinary tract infection was 27 percent; readmission 3.2 percent, and 3.6 percent returned to the operating room. No difference was observed in median risk scores between those with and without

postoperative adverse events indicating that the ACS NSQIP surgical risk calculator is an overall poor predictor of outcomes from pelvic reconstructive surgery. While the low prevalence of serious events could have contributed to these results, the authors concluded that a more accurate surgical risk calculator is needed for women undergoing these procedures.

Boyd SS, O'Sullivan D, LaSala C. Evaluating Postoperative Morbidity in Patients Undergoing Pelvic Reconstructive Surgery Using the American College of Surgeons National Surgical Quality Improvement Program Surgical Risk Calculator. Female Pelvic Med Reconstr Surg. 2020 Jun;26(6):364-369. doi: 10.1097/SPV.0000000000000715.

Catheter management and daily activities are easier with plug-unplug catheter relative to traditional catheterization.

About one quarter of female patients undergoing pelvic reconstructive surgery require short-term catheter use post-operatively. Traditionally, patients are discharged home with a catheter attached to a bag, allowing for continuous drainage. An alternative approach, the plug-unplug catheter, allows the catheter to be detached from the bag and plugged; patients can intermittently drain the bladder by unplugging it. In a randomized controlled trial, Drs. Sarah Boyd, David O'Sullivan and Elena Tunitsky-Bitton evaluated these two approaches on activity after failed voiding trials post-pelvic reconstructive surgery.

Sixty-three patients with a failed postoperative voiding trial after reconstructive pelvic surgeries were randomized to plug-unplug (n=32) or continuous drainage (n=31) catheters. The primary outcome was a mean activity assessment scale score. Secondary outcomes included urinary tract infection (UTI), time to passing outpatient voiding trial, and patient satisfaction. Enrollees who passed the voiding trial were assigned to a "Reference" arm. No differences were observed in postoperative activity. Women in the continuous drainage arm had more difficulty compared with the plug-unplug arm managing the catheter "during the day" (P=.043) and "all the time" (P=.049), and felt the catheter impeded activities (P=.012) and wearing clothes (P=.005).

The catheter arms had significantly higher rates of culture-positive UTI compared with the reference arm (58.7% vs 6.7%, P<.001). However, the rate of UTI did not differ between catheter arms (plug-unplug, 68.8 percent vs. continuous drainage, 48.4 percent, P=.625). The majority of patients passed their outpatient voiding trials at the initial postoperative visit (plug-unplug 71.9 percent, continuous drainage 58.1 percent, P=.250). There was no difference in patient satisfaction, with the majority reporting they were "very satisfied" (plug-unplug 78.1 percent, continuous drainage 80.0 percent, reference 66.7 percent, P=.202). The authors concluded that the plug-unplug method is an acceptable alternative to traditional catheterization after pelvic reconstructive surgery. This method could facilitate an easier return to regular daily activities.

Boyd SS, O'Sullivan D, Tunitsky-Bitton E. A Comparison of Two Methods of Catheter Management After Pelvic Reconstructive Surgery: A Randomized Controlled Trial. Obstet Gynecol. 2019 Nov;134(5):1037-1045. doi: 10.1097/AOG.0000000000003525.

Routine follow-up every 24 weeks is non-inferior to every 12 weeks for office-based pessary care.

Reducing the amount of time patients have to spend in the office for routine follow-up care could free up more time for work, family or recreational activities. For women requiring office-based pessary care, it may be possible to reduce visit intervals while maintaining safety.

To pursue this question, Dr. Paul Tulikangas and his team conducted a randomized, non-inferiority trial of office-based pessary care involving 448 women wearing a ring, Gellhorn or incontinence dish pessary to treat pelvic organ prolapse, incontinence or both. Patients were randomized 1:1 to routine pessary care (office visits every 12 weeks, "routine" arm) or to extended pessary care (office visits every 24 weeks, "extended" arm). The primary study outcome was the rate of vaginal epithelial abnormalities (epithelial break or erosion) at the final study visit (48 weeks). The predetermined non-inferiority margin was 7.5 percent. The rate of epithelial abnormalities at the final study visit (48 weeks) was 7.4 percent in the routine arm and 1.7 percent in the extended arm (difference, -5.7 percentage points; 95 percent CI -7.4 to -4), which met the criterion for non-inferiority. The rates of all types of epithelial abnormalities did not differ between arms at any time point. Increasing duration of pessary use (P=.003) and history of prior epithelial abnormalities were associated with development of epithelial abnormalities (P=.01). Other than epithelial abnormalities, no adverse events related to pessary use occurred in either arm. The authors concluded that in this patient population, routine follow-up every 24 weeks is non-inferior to every 12 weeks based on incidence of vaginal epithelial abnormalities.

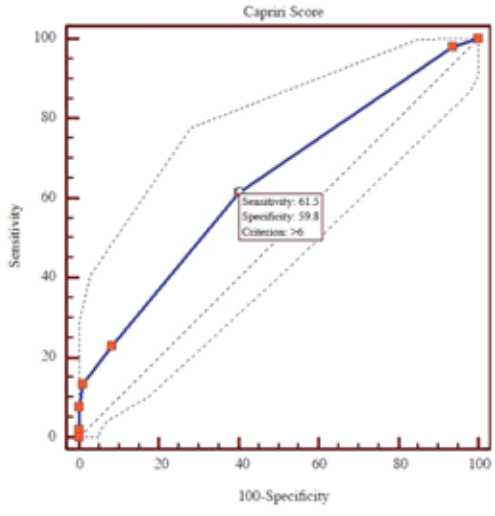
Propst K, Mellen C, O'Sullivan DM, Tulikangas P. Timing of Office-Based Pessary Care: A Randomized Controlled Trial. Obstet Gynecol. 2020 Jan;135(1):100-105. doi: 10.1097/AOG.0000000000003580.

Caprini score predicts postoperative VTE in patients undergoing RARP.

Postoperative venous thromboembolism (VTE) is the leading cause of non-cancer death, following major abdominal or pelvic cancer surgery. The incidence of VTE after radical prostatectomy is 0.3–3.9 percent. Given the risks of VTE associated with radical prostatectomy and the severity of such a diagnosis, there is a strong need for a preoperative tool that could be used to predict VTE risk in this patient population. While previous research including urological patients suggested the Caprini Risk Assessment Model could be a useful VTE risk stratification tool for those undergoing prostatectomy, its usefulness in this specific patient population had not previously been evaluated.

Dr. Joseph Wagner and his team assessed the usefulness of the Caprini RAM as a predictor of VTE in patients undergoing robotic-assisted radical prostatectomy (RARP) through a retrospective review of patients who underwent RARP for prostate cancer between December 2003 and February 2016. A total

ROC curve using Caprini score to predict VTE
ROC: operating characteristic; VTE: venous thromboembolism



of 3,719 patients underwent RARP during the study period with 52 (1.4 percent) identified as VTE cases and 97 who met the criteria for controls. Multiple logistic regression indicated that the Caprini score and operative time were independently both significant predictors of VTE (p=0.005 and p=0.044, respectively). Caprini score showed a significant but moderate relationship to VTE (area under curve [AOC]=0.64; p=0.004, below). A Caprini score >6 was the best arithmetic balance for sensitivity (61.5; 95 percent confidence interval [CI]: 47.0–74.7) and specificity (59.8; 95 percent CI: 49.3–69.6). These results support the usefulness of the Caprini score as a predictor of postoperative VTE in patients undergoing RARP.

Frankl J, Belanger M, Tortora J, McLaughlin T, Staff I, Wagner J. Caprini Score and Surgical Times Linked to the Risk for Venous Thromboembolism after Robotic-Assisted Radical Prostatectomy. Turk J Urol. 2020 Jan 6;46(2):108-114. doi: 10.5152/tud.2019.19162. Print 2020 Mar.

Urethral slings are associated with improvements in climacturia symptoms, bother and incontinence after radical prostatectomy.

Climacturia affects up to 45 percent of men after radical prostatectomy (RP). Although urethral slings decrease the severity and frequency of stress incontinence after RP, their efficacy as a treatment for climacturia after RP has not been well studied.

Dr. Joseph Wagner and his team evaluated patient-reported changes in climacturia symptoms after implantation of a urethral sling as a treatment for stress incontinence after RP. Men who received urethral slings for stress incontinence after RP were mailed an 11-item questionnaire asking them about climacturia symptoms before and after implantation of a urethral sling. Respondents were asked to report on climacturia frequency and severity, bother, partner bother and incontinence before and after implantation of urethral slings.

A total of 42 questionnaires were mailed; 17 were available for analysis. Statistically significant shifts toward improvement from pre-sling to post-sling were noted for frequency of leakage during sexual arousal or orgasm and for the degree to which leakage of urine during sexual arousal or orgasm was a “bother.” While almost all (94 percent) of the men were incontinent before the sling, this percentage dropped to 53 percent after the sling. These results suggest that urethral slings should be discussed with patients as a treatment strategy for climacturia after RP.

Nolan J, Kershen R, Staff I, McLaughlin T, Tortora J, Gangakhedkar A, Pinto K, Champagne A, Wagner J. Use of the Urethral Sling to Treat Symptoms of Climacturia in Men After Radical Prostatectomy. J Sex Med. 2020 Jun;17(6):1203-1206. doi: 10.1016/j.jsxm.2020.03.001. Epub 2020 Apr 4.

New surgical simulation model for vaginal anterior colporrhaphy has high construct validity and low cost.

Surgical simulation is invaluable for allowing residents to accrue experience and refine their surgical technique before operating in the real world setting, but cost can be an issue when designing new simulation models.

Dr. Elena Tunitsky-Bitton and a team from the Tallwood Institute designed and validated a surgical simulation model for vaginal anterior colporrhaphy. The new model could be constructed easily using common materials and cost $43.92 with reusable components ($11 per use). The model was tested on obstetrics and gynecology residents divided into two groups: "novice" and "advanced." An "expert" group included female pelvic medicine and reconstructive surgery (FPMRS) fellows and faculty. All subjects were recorded performing anterior colporrhaphy using the simulation model. Deidentified, silent videos of recorded performances were evaluated by a blinded reviewer using the Objective Structured Assessment of Technical Skills (OSATS) and a procedure-specific assessment, based on the American Board of Obstetrics and Gynecology milestone evaluation.

The 37 participants included 13 novices, 18 advanced residents and six experts. The experts scored significantly higher than both resident groups in each of the domains of the OSATS and the procedure assessment. The mean OSATS score for experts was 32.30 (±6.06) (maximum, 35); novice, 17.15 (±5.84); and advanced, 21.11 (±5.61) ($P = 0.001$). The experts' scores for the procedure assessment (maximum, 25) was 23.00 (±3.95); novice, 10.62 (±4.70); and advanced, 14.33 (±4.73) ($P < 0.001$). The two trainee groups did not differ significantly in their overall performance. Most trainees (29 [94 percent]) evaluated the model as a useful tool in learning this procedure. Higher scores by experts versus trainees confirm construct validity of this model. The new model may serve as a valuable simulation tool allowing trainees to improve their surgical technique for anterior colporrhaphy.

O'Meara A, Ramaseshan AS, O'Sullivan DM, Tunitsky-Bitton E. Development and Validation of a Vaginal Anterior Repair Simulation Model for Surgical Training. Female Pelvic Med Reconstr Surg. 2020 Jul 14. PMID: 32675628.

A new clinical practice model for female reconstructive surgery optimizes perioperative pain management, minimizes opioid use and maintains patient satisfaction.

Postoperative opioid prescription patterns have been important factors in driving the opioid epidemic and comprehensive pain management systems are needed to minimize opioid use in surgical patients. Enhanced recovery after surgery (ERAS) protocols incorporate preoperative multimodal pain regimens to decrease the use of opioids in the post-operative period. A team of researchers led by Dr. Elena Tunitsky-Bitton evaluated an ERAS protocol that included a restrictive opioid prescription for female reconstructive surgery that optimized perioperative pain management with minimal opioid use by integrating the electronic prescription of controlled substances (EPCS).

The study included 113 women undergoing inpatient pelvic reconstructive surgery from December 2018 to June 2019, with an overnight stay after surgery. The ERAS protocol incorporated pre-admission counseling, education and nutrition guidance and multi-modal pain, nausea and VTE prophylaxis during the preoperative, intraoperative, postoperative and post-discharge periods. Most patients after pelvic reconstructive surgery used fewer than 11 oxycodone (5 mg) tablets, averaging less than four tablets, with a third of patients not requiring any opioids. About 11 percent of patients needed a refill and all described the refill process as easy. Patients reported median brief pain inventory scores for "average pain" of 0 (no pain) at postoperative week one and postoperative weeks four to six; these scores did not clinically correlate with post-discharge narcotic use. More than 80 percent of patients at postoperative week one and postoperative weeks four to six reported being satisfied or extremely satisfied with

their post-discharge pain control. About 88.5 percent of patients felt the number of opioids they were discharged with was sufficient for their pain needs at both measurement periods.

This study illustrates that patients need a limited number of narcotic pills post-discharge after pelvic reconstructive surgery. A strength of the protocol is that a minimal number of opioids can be prescribed because the secure EPCS allows for convenient electronic refill if needed.

Ramaseshan A, O'Sullivan D, Steinberg A, Tunitsky-Bitton E. A Comprehensive Model for Pain Management in Patients Undergoing Pelvic Reconstructive Surgery: A Prospective Clinical Practice Study. Am J Obstet Gynecol. 2020 Aug; 223(2):262.e1-262.e8. doi: 10.1016/j.ajog.2020.05.019. Epub 2020 May 13.

Risk of pelvic organ prolapse increases with maternal age at first delivery.

While older age at the time of first delivery is associated with increased risk of complications and adverse events, its relationship with pelvic organ prolapse is unclear. In an effort to characterize this association, Drs. Rui Wang, Paul Tulikangas and Elena Tunitsky-Bitton performed a retrospective cross-sectional study using the National Health and Nutrition Examination Survey data from 2005 to 2012.

A total of 6,203 women reported age at first delivery. Kaplan-Meier curves were different for women based on their age at first delivery (P = 0.034). For each year increase in age at first delivery, there was a 6-percent increase in the rate of developing prolapse (adjusted hazard ratio, 1.06; 95 percent confidence interval, 1.01- 1.11; P = 0.011). Compared with a woman who was 20 years at her first delivery, someone who was 30 years had 1.79 times the risk, while at 40 years the risk was 3.21 times. Among women with at least one vaginal delivery, the same relationship was found (adjusted hazard ratio, 1.06; 95 percent confidence interval, 1.01- 1.12; P = 0.019). However, this was not significant for women with only cesarean deliveries (P = 0.367). These data illustrate that older age at the time of first delivery was associated with a higher risk of subsequent prolapse although these results should be interpreted with caution given the limitations of cross-sectional survey data.

Wang R, Tulikangas PK, Tunitsky-Bitton E. Relationship Between Maternal Age at First Delivery and Subsequent Pelvic Organ Prolapse. Female Pelvic Med Reconstr Surg. 2020 Sep 8. PMID: 32910080

Notes

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17086 Dec2021