

EXPANDING ACCESS TO EXCELLENCE 2017 Inova Report to the Community



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INOVA LOCATIONS: We are shaping the future of health through our integrated network of hospitals, primary and specialty care practices, emergency and urgent care centers, outpatient services and destination institutes.

THE NORTHERN VIRGINIA REGION



ARLINGTON COUNTY

Inova Urgent Care Center North Arlington Inova Urgent Care Center South Arlington Inova Behavioral Health Services Ballston Inova Physical Therapy Center Ballston Inova Physical Therapy Center Virginia Square Inova Primary Care Ballston Inova Primary Care Shirlington

CITY OF ALEXANDRIA

Inova Alexandria Hospital Inova Medical Pavilion Mark Center Inova Center for Wellness and **Metabolic Health** Alexandria Inova Alexandria Occupational **Health Center** Alexandria **Inova Physical Therapy Center** Alexandria **Simplicity Health** Alexandria **Inova Transitional Services Alexandria** Inova Primary Care Mark Center **Inova Primary Care** Old Town

FAIRFAX COUNTY

- Inova Fairfax Medical Campus - Inova Children's Hospital
- Inova Children's Hospit

- Inova Fairfax Hospital - Inova Heart and Vascular Institute - Inova Women's Hospital Inova Fair Oaks Hospital Inova Mount Vernon Hospital Inova HealthPlex Franconia/Springfield Inova Emergency Care Center Franconia/Springfield Inova Urgent Care Center West Springfield Inova Franconia Springfield Ambulatory Surgery Center Inova HealthPlex Lorton Inova Emergency Care Center Fairfax Inova Emergency Care Center Lorton Inova Emergency Care Center Reston/Herndon Inova Urgent Care Center Centreville Inova Urgent Care Center Dunn Lorina Inova Urgent Care Center Tysons Inova Urgent Care Center Vienna Inova Northern Virginia Surgery Center Fair Oaks Inova Center for Wellness and Metabolic Health Fairfax Inova Center for Wellness and Metabolic Health Fair Oaks **Inova Behavioral Health Services** Alexandria Inova Behavioral Health Services Fairfax Inova Behavioral Health Services Mount Vernon Inova Blood Donor Services Centreville **Inova Blood Donor Services** Annandale Inova Cares Clinic for Women Alexandria Inova Cares Clinic for Women and Children Falls Church **Inova Cares Clinic for Women** Herndon **Inova Comprehensive Addiction** Treatment Services Inova HealthSource Inova Juniper Program Fairfax

Inova Juniper Program Falls Church **Inova Juniper Program** Herndon Inova Juniper Program Mount Vernon Inova Kellar Center Inova Physical Therapy Center Centreville **Inova Physical Therapy Center** Fairfax Inova Phusical Therapy Center Fairfax **Inova Physical Therapy Center** Fair Oaks **Inova Physical Therapy Center** Franconia/Springfield Inova Physical Therapy Center Mount Vernon **Inova Physical Therapy Center** Springfield Inova Physical Therapy Center Tysons/Vienna Inova Life with Cancer® Inova Transitional Services Fairfax **Inova Transitional Services** Herndon Inova VIP 360° Program Inova VNA Home Health Simplicity Health Annandale Inova Primary Care Springfield **Inova Primary Care** Mount Vernon Inova Primary Care Annandale **Inova Primary Care** Burke **Inova Primary Care** Centreville **Inova Primary Care** Chantilly **Inova Primary Care** Dunn Loring (Merrifield) **Inova Primary Care** Fairfax Inova Primary Care Falls Church **Inova Primary Care** Lorton **Inova Primary Care** McLean Inova Primary Care Oakton **Inova Primary Care** Reston **Inova Primary Care** Tusons **Inova Primary Care** Vienna

LOUDOUN COUNTY

Inova Loudoun Hospital Inova Medical Pavilion **Dulles South** Inova HealthPlex Ashburn Inova Emergency Care Center Ashburn Inova Emergency Care Center Lansdowne Inova Emergency Care Center Leesburg Inova Urgent Care Center South Dulles Inova Urgent Care Center Purcellville Inova Loudoun Ambulatory Surgery Center **Inova Center for Wellness** and Metabolic Health Loudoun Inova Behavioral Health Services Leesbura Inova Behavioral Health Services Loudoun **Inova Blood Donor Services** Sterling Inova Juniper Program Leesburg **Inova Loudoun Nursing and Rehabilitation Center Inova Physical Therapy Center** Ashburn **Inova Physical Therapy Center Dulles South Inova Physical Therapy Center** Lansdowne **Inova Transitional Services** Leesburg Simplicity Health Sterling **Inova Primary Care** Purcellville **Inova Primary Care** Ashburn Inova Primary Care **Dulles South Inova Primary Care** Leesbura Inova Primary Care Sterling

PRINCE WILLIAM COUNTY

Inova Urgent Care Center Manassas Inova Juniper Program Dumfries Inova Juniper Program Manassas Inova Physical Therapy Center Woodbridge Inova Primary Care Gainesville Inova Primary Care Lake Ridge

HOSPITALS URGENT CARE/EMERGENCY SERVICES SERVICES AND COMMUNITY PROGRAMS INOVA PRIMARY CARE

Message from Inova's President and CEO

Inova is an organization focused on excellence. From pioneering techniques and world-leading research to state-of-the-art facilities and advances in clinical care, we know what it means to bring the highest quality healthcare to all who need it.

In these pages, we are proud to share the many ways in which we uphold our mission to *meet each patient's unique needs every time, every touch*. Read about our innovative outreach programs to combat diabetes and tackle childhood obesity. Learn how we care for the most vulnerable among us, and continue to expand access for women, children and older adults. And discover the partnerships that fill vital gaps and strengthen resources to support our region's physical and mental health.

Our patients tell our story best. Meet the young girl whose lifesaving heart surgery was performed before she was even born, and a young woman whose world was forever changed when she finally found relief from her medication-resistant epilepsy.

Building a healthcare resource that promotes innovation and improves lives takes vision and passion. We are proud to be the region's not-for-profit healthcare partner, ensuring access to excellence for all.

Sincerely,

J. Stephen Jones, MD President and CEO



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 We are proud to be the region's not-for-profit healthcare partner, ensuring access to excellence for all.

INOVA BY THE NUMBERS*

Inpatient Admissions



Outpatient Referred Admissions 436,839



Births 19,471



Emergency Room Visits 420,729





Nurses 5,380



Affiliated Physicians and Advanced Practice Providers





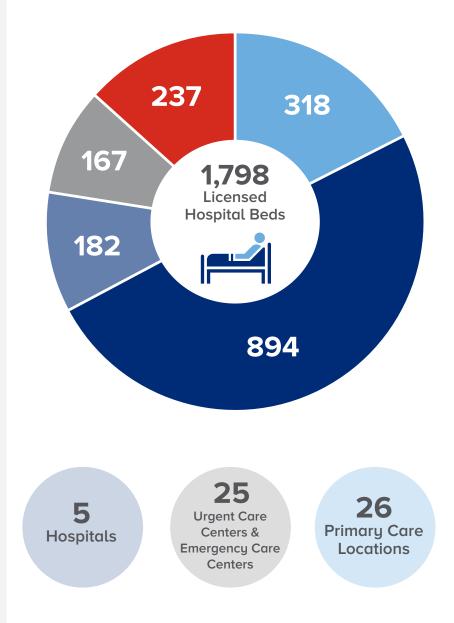
Physicians Only Affiliated with Inova **3,684**



KEY STATISTICS

Licensed Hospital Beds in:

Inova Alexandria Hospital Inova Fairfax Medical Campus Inova Fair Oaks Hospital Inova Loudoun Hospital Inova Mount Vernon Hospital



*2017 Statistics

COMMUNITY INVESTMENT (in Millions)

Charity Care
130
Medicaid Unreimbursed Cost
124
Other Community Benefit
25
Education
11
Research
11
Total Community Investment
\$301 M

KEY FINANCIALS (in Millions)





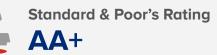


\$380 Investment in New Facilities



Education/Research







PREVENTATIVE AND WELLNESS CARE

One of the ways Inova makes the biggest impact on our community's health is by offering services and programs that help people stay healthy. By supporting people as they establish healthy habits, and standing by them in their toughest times, Inova fosters broad community wellness that enables individuals to live longer, healthier lives. Inova teams collaborate with regional partners to develop solutions resulting in improved, more productive lives and a healthier future for all.

HEALTH, HABITS AND OUTCOMES

Inova Center for Wellness and Metabolic Health

Diabetes rates continue to rise. According to the American Diabetes Association (ADA), a staggering 30.3 million Americans have diabetes, and 84.1 million more have prediabetes, a condition that often leads to diabetes. Inova Center for Wellness and Metabolic Health is helping people fight back against the diabetes epidemic.

Inova Center for Wellness and Metabolic Health provides endocrinology medical visits, comprehensive diabetes classes and medical nutrition therapy for adults and children with metabolic issues and diabetes in four Northern Virginia locations. The Center boasts the area's leading Certified Diabetes Educators and Board-Certified Endocrinologists and is recognized for its diabetes education program by the ADA. These programs empower diabetics to make the necessary lifestyle changes to successfully selfmanage diabetes through individualized care and consultations.

In 2017, Inova Center for Wellness and Metabolic Health helped nearly 10,000 people across the region manage their diabetes and metabolic disorders through classes, medical visits, support groups and other services.

Inova Healthy Plate Club

Inova Healthy Plate Club partners with elementary schools in Fairfax County, Loudoun County and the City of Alexandria to teach kids about healthy eating and cooking. From kale chips to cauliflower nuggets, Inova Healthy Plate Club makes healthy eating accessible – and fun – for kids. By doing so, the program's goal is to reduce childhood



obesity rates among low-income children throughout our community. Inova Healthy Plate Club is offered for free to schools that have at least 50 percent of students eligible for free and reduced-price lunch.

Children attend eight weekly classes, where they get a chance to prepare vegetables in creative ways and learn how to read nutrition labels, build healthy meals, and understand the difference between "everyday foods" and "sometimes foods".

More than 300 children have graduated from Inova Healthy Plate Club through the end of 2017.

In 2017, Inova Healthy Plate Club programs were held at six elementary and middle schools and one community-based summer camp.



9.4% of the U.S. population has diabetes.

Source: American Diabetes Association (2017)



18.5% of American children ages 2 to 19 are obese.



3x more children are obese now than in 1980.

Source: RWJF State of Obesity (2018)

School Breakfast Grant

When children are hungry, they are more likely to have problems in school and other social situations. According to the National Education Association (NEA), children who miss meals and are hungry don't do as well as they could at school. Having breakfast at school helps kids perform better.

What's more, hunger can significantly affect children's health. Research shows that hungry kids are at greater risk of chronic health problems, including asthma and obesity. Hunger can also lead to behavioral problems, low energy and poor concentration.

At Inova, we believe every child deserves the opportunity to fulfill his or her potential at school. In 2017, Inova awarded \$74,500 to help expand the Alternative Breakfast Program in elementary schools with the highest percentage of students who qualify for free or reduced-price meals in Fairfax and Loudoun counties and the City of Alexandria. This support is an extension of Inova's mission to promote wellness throughout the community and promote healthy habits among local school-aged children.

The Alternative Breakfast Program addresses the limitations of the traditional model, where students are served breakfast in the cafeteria, before the bell. Due to late buses or social pressures, many kids actually miss out on school breakfast. For the 28 percent of children in Fairfax County who rely on free or reducedprice meals, this can leave them hungry for the first part of the school day. With the alternative model, all children are served breakfast in the classroom, and no child goes hungry.

SNAP Double Dollars

Decreasing childhood obesity rates begins in the family kitchen, but many low-income families face challenges in accessing the fresh produce that forms the backbone of nutritional guidelines. With SNAP Double Dollars, Inova aims to change that.

Through this program, Inova gives grants to local farmers markets to help double the purchasing power of SNAP (formerly food stamps) shoppers. Families who qualify for SNAP benefits can use their Electronic Benefits Transfer (EBT) card at the farmers market to receive up to \$20 in matching funds, courtesy of Inova.

Inova Well Fitness Classes

Exercise is one of the best things people can do for their health. Even moderate exercise can have a big effect on a host of chronic conditions – from diabetes to heart disease – helping to prevent them, or make them easier to manage. That's why fitness is part of the services Inova provides to our Northern Virginia community.

Inova Well's fitness classes are one important way Inova makes it easier for people in our community to get the exercise they need to get – and stay – healthy. Formerly called Inova HealthSource, Inova Well has been offering fitness classes for 25 years.

In 2017, Inova Well offered dozens of different classes, including:

- Mind-body wellness
- Cardio and strength building
- Prenatal and "mommy and me" yoga
- Rehabilitation, including chair yoga and pulmonary rehab
- Senior-focused classes
- Specialty classes

Pricey gym memberships are out of reach for many people. Inova Well constantly evaluates its pricing structure to make sure that everyone, across all income levels, can access Inova's fitness classes.

To ensure a safe environment, all of Inova Well's instructors are CPR, AED and first aid certified. Many classes are offered on evenings and weekends.

In 2017, with more than 300 classes taught, Inova Well helped 2,800 participants meet their wellness goals.

PREVENTATIVE AND WELLNESS CARE

SOLUTIONS FOR VULNERABLE POPULATIONS

Forensic Assessment and Consultation Teams

In times of crisis, the right resources can change lives. That's certainly the case with the Charles B. and Betty G. Ewing Forensic Assessment and Consultation Teams (FACT) department. Founded in the late 1990s with a generous contribution from the Ewing family, the FACT department provides specialized forensic medical evaluation services for children and adults who have been victims of violent crime, including sexual assault, domestic violence, physical child abuse, elder physical abuse, strangulation and human sex trafficking.

Comprised of expert forensic nurse examiners, forensic physicians and child life specialists, the FACT team's services are available at no charge to the victim. Services are not confined to Inova hospitals. FACT team members travel to other hospitals across the region, as well as to detention centers and military installations, to meet with victims of abuse.

FACT's goal is to help abuse victims take the first steps toward recovery. Sensitive and supportive throughout the process, the team collects and documents the evidence of abuse in a private, dedicated space. From the emergency room to the courtroom, the FACT team is passionate about making sure patients receive the care and support they need as they grapple with their experiences and move from victims to survivors.

Over the last three years, the FACT program has served more than 1,800 abuse victims. In 2017, FACT served 880 victims of abuse.



From the emergency room to the courtroom, the FACT team is passionate about making sure patients get the support they need.

Inova Juniper Program

Inova Juniper Program is the area's largest provider of HIV/AIDS care.

Inova Juniper Program provides primary medical care and medical case management to people living with HIV at seven clinics across Northern Virginia. To fulfill its mission to combat the social stigma of HIV/AIDS and help clients live healthier lives, Inova Juniper Program offers a range of support services for this underserved population.

Beyond medical care, Inova Juniper Program provides:

- · Mental health and substance abuse therapy
- Outreach and psychosocial support
- Dental and other specialty care
- Housing assistance
- Travel and transportation support
- Food and copay assistance
- Support groups

In addition, Inova partners with the Mid-Atlantic AIDS Education and Training Center (MAAETC) and the Virginia HIV/AIDS Resource and Consultation Center (VHARCC) to provide HIV/ AIDS-related education, training and capacity building for healthcare workers.

Inova Juniper Program houses an HIV prevention program that provides services to high-risk groups in numerous settings. These services include HIV testing, education, outreach and counseling. Specific programs serve current and former inmates, same-gender loving men of color and individuals seeking pre and postexposure prophylaxis.

Inova Juniper Program expands its reach each year. In 2017, Inova Juniper Program served 1,886 clients.

About **1.1 million** Americans are currently living with HIV.

In 2015, there were 38,500 new cases of HIV in the United States.

Source: CDC (2015)

SIMPLICITY HEALTH

Although Northern Virginia as a whole is among the wealthiest in the nation, a 2017 report by the Northern Virginia Health Foundation shows that many areas within the region have significant poverty and poorer health outcomes. Inova believes people should never have to choose between feeding their family or caring for their own health.

In 2017, Inova was proud to continue operating three Simplicity Health clinics in high-need communities within Northern Virginia. Simplicity Health clinics provide excellent primary care services for adults, including ongoing care, prevention and disease management, at affordable fees.

Simplicity Health clinics aim to serve adults who:

- · Do not qualify for Medicaid
- Do not get health insurance through work
- Have insurance with high copays and deductibles that make it difficult to access basic healthcare services

Clinic staff are multicultural and multilingual, providing a more comfortable and culturally sensitive place to receive care.

In 2017, Simplicity Health clinics had just under 4,000 patient encounters, helping 2,100 people in high-need areas receive the healthcare they need.

ACCESS TO CARE

Even with a world-class health system like Inova in your backyard, it can still be difficult to access the services you need to get and stay healthy. That's why Inova offers a wide range of clinics and programs designed to meet the specific needs of our region's children, women and aging adults.

CHILDREN'S CARE

Inova Cares Clinic for Children

To grow up healthy, children need regular access to a pediatrician – ideally a provider who can build a relationship and get to know the child and his or her family. Whether for well-child checkups or sick visits, parents need a place to go to get high quality medical care for their children, no matter their income level. Since 1993, uninsured or underinsured parents, or those who qualify for Medicaid, have been able to count on Inova Cares Clinic for Children.

Inova Cares Clinic for Children is a certified level-3 patient-centered medical home. Medical home recognition by the National Committee for Quality Assurance (NCQA) demonstrates a model of primary care that is patient centered, comprehensive, team based, coordinated, accessible, and focused on quality and safety.

Inova Cares Clinic for Children sees 100-150 patients each day and offers flexible, extended hours – including evening and weekend appointments as well as walk-in clinic hours – to meet working families' scheduling needs.

Inova Cares Clinic for Children handles the full range of pediatric primary care for children up to age 21, including well-child visits, same-day sick appointments, medical follow ups, school and sports physicals, and immunizations. Staff members speak English and Spanish, and interpreter services are available as well.



In 2017, Inova Cares Clinic for Children cared for 7,400 children through 24,224 patient encounters.

CARE CONNECTION FOR CHILDREN

Inova partners with the Virginia Department of Health to administer Northern Virginia Care Connection for Children, part of Virginia's statewide network for children with special healthcare needs. The program's goal is to help families of these children access healthcare and coordinate community and education resources.



Care Connection for ChildrenTM A partner in the Virginia children's special health needs network

The program offers free care coordination services, information, education and support for families, and referrals for eligible children from birth through age 21.

Working closely with families, Care Connection for Children's compassionate, bilingual staff develops a customized, comprehensive and culturally appropriate plan for each child's medical treatment, special equipment, academic support and community resources. The goal is to bring all of the locally available resources together to help each special child and his or her family.

In 2017, Care Connection for Children served 943 families, 30 percent more than in 2016, making it easier for more children to reach their potential.

PATIENT SPOTLIGHT:

Toddler Eliza George Receives Lifesaving Heart Surgery at Inova

Inova's strength in many arenas came together to save the life of Eliza George, who was diagnosed with Tetralogy of Fallot – a life-threatening heart condition – while still in utero. The maternal-fetal medicine expertise at Inova Women's Hospital, together with the pediatric cardiology and cardiac surgery strengths of Inova Children's Hospital, added up to a happy ending for Eliza and her family.

Ginny and Erik George were delighted to be expecting their first child. That excitement turned to worry when, at 12 weeks gestation, a sonogram revealed that their baby could have a heart condition. Subsequent tests revealed that the baby had a heart defect called Tetralogy of Fallot – her heart had a tiny hole between the lower chambers, and the vessels coming out of the heart were positioned in the wrong way. The defect is typically repaired early in life to restore normal blood flow.

Ginny was immediately referred to the Inova Children's Hospital Fetal Care Center. There, a team of highly trained nurse practitioners, nurse navigators, social workers, genetic counselors and pediatric specialists was ready to provide Ginny and her baby specialized care.

"Our family-centered approach allows us to provide the full spectrum of care for both mom and baby, all in one location," said Margot Ahronovich, MD, medical director of the Fetal Care Center. "Our caring patient navigators and nurse practitioners guide each family through every aspect of care, from diagnosis through delivery and beyond."

For Ginny and Erik, getting the information they needed from the supportive, knowledgeable team at the Fetal Care Center provided them with the necessary strength and knowledge to get through a challenging time.

"Knowing about the defect while Eliza was still in utero gave us the opportunity to become educated about her particular condition, research all of our options and be able to get an understanding of what was going on," said Ginny.

At 24 weeks into Ginny's pregnancy, she and Erik were introduced to Lucas Collazo, MD, medical director of Pediatric



Eliza is a very typical toddler," said Ginny.
"She walks assisted very well, she scoots incredibly fast and she talks constantly.
Everybody who meets her says they haven't met a child who talks as much as her. I forget she even had medical issues. **99**

and Congenital Cardiac Surgery at Inova Children's Hospital. Dr. Collazo reassured them that Eliza's condition could be surgically repaired. With close monitoring and frequent visits with her pediatric cardiologist, they would be able to decide the best management and timing of surgery.

"When a baby is diagnosed with congenital heart disease, the whole NICU team is aware and things are set in motion earlier," Dr. Collazo said, noting that for many congenital heart defects, being prepared is essential for a better outcome.

Eliza's surgery was scheduled for May, four months after she was born. For four hours, Dr. Collazo and his team repaired the hole in her heart and enlarged the narrowed area restricting blood flow to her lungs, restoring normal blood flow.

"Eliza did very well," said Dr. Collazo. "She had a full repair and she was out of the hospital in five days."

With close monitoring and follow up by the cardiac team, Eliza can lead a normal life, even while she faces the possibility of a future surgery as she grows. Now nearly two years old, Eliza George is getting ready for preschool next year.

"Eliza is a very typical toddler," said Ginny. "She walks assisted very well, she scoots incredibly fast and she talks constantly. Everybody who meets her says they haven't met a child who talks as much as her. I forget she even had medical issues."

Inova Partnership for Healthier Kids

Inova Partnership for Healthier Kids program works with schools and community partners to identify uninsured children and link them to insurance options. A bilingual team provides families with comprehensive application and enrollment assistance for programs like Medicaid, CHIP and local safety net providers.

Inova collaborates with the Virginia Department of Medical Assistance Services; the Virginia Health Care Foundation; schools in Fairfax, Loudoun and Prince William counties and the City of Alexandria; and many community partners, to determine the most effective ways to connect with the families of unenrolled children. For example, Inova Partnership for Healthier Kids reaches out to families by sending fliers home in students' backpacks and bringing representatives to speak at community fairs and after-school events.

In 2017, 7,720 individuals gained access to healthcare through Inova Partnership for Healthier Kids application and enrollment assistance for Virginia's Family Access to Medical Insurance Security (FAMIS) programs and referrals to local safety net providers.

About Inova Children's Heart Program

The nationally recognized Inova Children's Heart Program, one of the largest, most successful programs in the mid-Atlantic region, provides specialized care to children of all ages from Northern Virginia, Maryland, Washington, DC and beyond.

Every year the team performs more than 300 cardiac surgeries on young children, including fragile newborns facing complex, challenging health problems, like Eliza George.



5.5% of children in Virginia do not have health insurance.

Source: U.S. Census Bureau (2016)

ACCESS TO CARE

WOMEN'S CARE

Inova Cares Clinic for Women

Now in its 57th year, Inova Cares Clinic for Women provides low-cost or no-cost healthcare for uninsured women in Northern Virginia. Available at three locations across the area, Inova Cares Clinic for Women provides comprehensive outpatient obstetrical services, gynecological care, diabetes management, case management, non-stress testing, colposcopy procedures, cryosurgery, breastfeeding support and nutritional counseling.

The clinic works in partnership with the Fairfax County Health Department and Inova Women's Hospital to provide coordinated OB/GYN services and prenatal care.

Additionally, the Inova Loudoun Hospital OB Clinic provides obstetrical services for uninsured and low-income women in cooperation with the Loudoun County Department of Health. Patients are seen by board-certified OB/GYNs and certified nurse midwives in a private medical office space on the Inova Loudoun Hospital Campus. The program provides comprehensive outpatient obstetrical services, prenatal care, diabetes management, non-stress testing and nutritional counseling. After the first postpartum checkup, patients receive a warm handoff to the local community health clinic for follow-up care, family planning and GYN and pediatric care.

In 2017, the program provided more than 43,000 obstetrical and gynecological patient appointments to more than 5,000 patients, and more than 2,800 babies were delivered at Inova hospitals to women receiving care at the clinics.



Inova Cares Clinic for Women provides low-cost or no-cost healthcare for uninsured women in Northern Virginia.



15.4% of women in Virginia do not have health insurance.

Source: U.S. Census Bureau (2016)

Breast cancer is the most common cancer in women.

85% of women with breast cancer have no family history of the disease.

Inova Pioneers a Groundbreaking Breast Cancer Surgery Technique

In 2017, a surgeon with Inova Mount Vernon Breast Care Program became the first in the world to use a new technology designed to reduce complications during breast reconstruction and identify whether cancer cells have spread to nearby lymph nodes.

Known as the SPY Portable Handheld Imaging System (SPY-PHI), the state-of-the-art device uses infrared fluorescence imaging to allow real-time measurement of blood flow through breast tissue. Fluorescence imaging has also been used successfully to identify when abnormal cancer cells migrate to nearby lymph nodes.

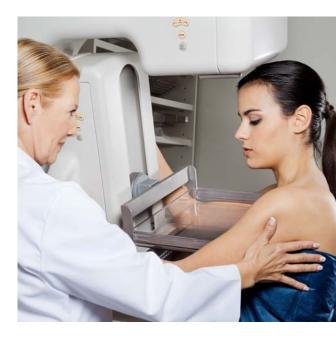
"SPY-PHI appears to be a much more accurate visual tool than what is currently used for lymph node mapping procedures, because it shows pathways so much more vividly," said David Weintritt, MD, FACS, director of Inova Mount Vernon Breast Care Program, founder of the National Breast Center and the first surgeon worldwide to use SPY-PHI in breast cancer treatment. "This technology increases the certainty that I will be able to find the correct lymph node when performing a minimally invasive sentinel lymph node biopsy."

By performing lymph node mapping using fluorescent imaging and SPY-PHI, a surgeon can precisely track a cancer's pathway through the lymphatic system to identify if the cancer has metastasized. Typically, when breast cancer spreads away from a tumor, the first place it reaches is a sentinel lymph node in the underarm area. Using fluorescent imaging technology, the surgeon injects a small amount of nontoxic indocyanine green (ICG) dye into or near the tumor in the breast, then traces its path using infrared light. This procedure is done during breast cancer surgery and does not require the patient to undergo an additional surgery.

Once the sentinel node is identified, the surgeon removes it and sends it to a pathologist for evaluation. If abnormal cells are not present in the sentinel node, then it is unlikely that other nodes are cancerous, reducing the need for further lymph node removal. In 2018, **6,620** women in Virginia will be diagnosed with breast cancer.

About 1,080 Virginia women will die from the disease this year.

Source: Virginia Breast Cancer Foundation (2016)



By performing lymph node mapping using fluorescent imaging and SPY-PHI, a surgeon can precisely track a cancer's pathway.

AGING POPULATION

Medical House Calls Program

For older adults and people with health problems that make leaving home difficult, a visit from a healthcare provider can mean the difference between staying healthy or ending up in the hospital. Inova's new Medical House Calls program brings back the old-fashioned house call – with modern technology to coordinate care, manage medications and help keep patients out of the hospital.

The program, established in 2017, is designed to help patients successfully "age in place" while reducing readmissions and overall healthcare costs. An interdisciplinary team provides comprehensive primary care in patient homes and assisted living facilities. These primary care services are "high-touch," with intensive patient management and care coordination. Patients can receive help managing multiple chronic illnesses, dealing with changes in functional ability, juggling multiple medications and coping with frailty or loss of mobility.

The program's staff works closely with inpatient teams, hospice agencies, skilled nursing staff, physical therapy staff, occupational therapy staff, mental health counselors and county services, connecting patients with the resources they need to have the best possible outcomes.

In 2017, the Medical House Calls program provided care to 458 patients in 48 zip codes across Northern Virginia.

ElderLink

ElderLink is a nonprofit partnership between Inova and the Fairfax Area Agency on Aging. The ElderLink team provides comprehensive assessments for older adults and their caregivers that determine what type of assistance would be helpful for each individualized situation. ElderLink works to develop a plan in collaboration with the individual that is structured to help meet his or her needs and goals, assist with obtaining the agreed upon services, and coordinate services and care. ElderLink also supports families in their caregiving role through multiple programs, as well as provides health and wellness programming throughout the community.

ElderLink's geriatric specialists work to maximize independence, safety in the home, caregiver support, and health and wellness.

In 2017, ElderLink helped 854 older adults and their caregivers receive the care and services they need to age with dignity.

Hospital Elder Life Program (HELP)

For more than 10 years, Inova has participated in the Hospital Elder Life Program (HELP), a nationally recognized model that helps older adults cope with hospitalization by remaining mentally and physically active.

HELP staff designs a personalized set of interventions, based on the individual patient's condition and needs. Then, HELP volunteers visit each patient three times a day to implement the plan, which includes daily visitors, meal assistance, therapeutic activity, physical activity, and sleep and stress management. HELP services are provided at no charge to eligible patients age 70 or older.

In 2017, HELP assisted 1,061 older adults cope with the stress of hospitalization.



BEHAVIORAL AND PSYCHOSOCIAL CARE

Health and wellness may start with the body – but keeping the mind healthy is an essential part of total wellness. As the region's trusted healthcare partner, Inova is committed to supporting our community's physical and mental health. To that end, Inova offers a wide spectrum of patient-centered, evidence-based behavioral health and substance abuse treatment services.

BEHAVIORAL AND PSYCHOSOCIAL CARE

SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES

Psychiatric Liaisons

For people and their families who are struggling with psychiatric issues, it can be difficult to know where to turn. Getting access to the right care right away can dramatically improve long-term outcomes.

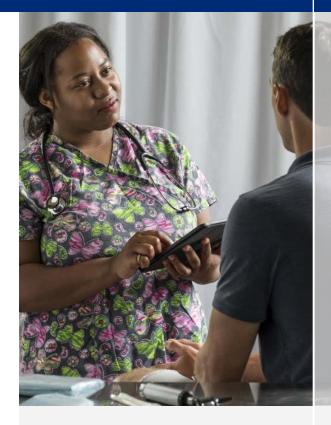
New in 2017, Inova's inpatient-based hospital psychiatric liaison program provided psychiatric consults and care navigation to patients who have been admitted to the hospital or are in the emergency department. Psychiatric liaisons evaluate patients, provide crisis intervention, offer care recommendations and reassess patients before discharge. Psychiatric liaisons are a key part of the extended care team and serve as an expert resource for patients, families and staff.

The psychiatric liaison program started on inpatient units at Inova Alexandria Hospital and will expand to other Inova hospitals. In addition, an extensive team conducts mental health and substance abuse evaluations 24/7, both in person and via telemedicine technology. They serve Inova's emergency departments, HealthPlexes and urgent care facilities.

In addition to consultation and care navigation, the psychiatric liaison team:

- Develops educational and training programs for mental health and substance abuse issues, including identification, treatment options and the caregiver's role
- Highlights resources and barriers affecting access to community mental health and substance abuse services
- Trains Inova partners on suicide risk assessments and processes for temporary detention orders, emergency custody orders and crisis intervention

In 2017, Inova psychiatric liaisons and navigators provided close to 7,000 consults, increasing education and access to behavioral healthcare.



Psychiatric liaisons are a key part of the care team and serve as an expert resource for patients, families and staff.

Inova CATS Program

Addiction and substance abuse challenges are a key driver of behavioral health disorders. In recognition of the role of addiction to alcohol as well as prescription and illicit drugs in mental health disorders, Inova established the CATS (Comprehensive Addiction Treatment Services) program.

CATS is comprised of a series of structured addiction treatment programs designed to help people who are battling substance use disorders of all kinds. The CATS team includes physicians, psychiatrists, nurses, licensed clinical therapists and certified addiction counselors. Each patient's journey starts with an in-depth assessment. The team uses the results to create an individualized treatment plan.

Available treatment options include:

- Inpatient medical detoxification
- Partial hospitalization
- Intensive outpatient programs
- Dual diagnosis intensive outpatient programs
- Sober living and relapse prevention groups
- Medication-assisted therapies
- Referral to residential programs (if needed)

In 2017, Inova CATS Program helped almost 20,000 people struggling with addiction.

Opioid Reduction Initiative

No community is immune to the opioid epidemic. In our community, far too many families are devastated by overdoses and deaths due to opioid addiction. To combat this growing health crisis, Inova has taken a leadership role in reducing opioid use through a multifaceted opioid reduction initiative.

Because a person's first exposure to opiates often happens in a hospital or emergency department setting, the opioid reduction initiative aims to decrease patients' opioid exposure while continuing to relieve their pain.

The opioid reduction initiative involves:

- 1. Educating hospital personnel about alternative medications that may be used in place of narcotics
- 2. Monitoring opioid prescriptions through a state database
- 3. Educating patients and families about their options
- 4. Providing a continuum of care to resolve each patient's pain issues

Inova emergency personnel have been working closely with all hospital departments and across the system to adopt a highly effective, standardized approach to treating pain, both in the emergency setting and after a patient is discharged.

The US experienced **5X** growth in prescription opioid deaths since 1999.

115 Americans die from an opioid overdose every day.

Source: CDC (2018)

100

drug overdose deaths occurred in Fairfax County in 2016 (the highest of any Virginia jurisdiction).

Treating pain without narcotics

There are many other options for treating pain, and Inova providers are moving away from opioids as a first-line therapy in favor of more targeted, multilayered approaches.

Inova's initiative meets new regulations regarding opioid use approved in 2017 by Virginia's Board of Medicine. When a patient is admitted to the emergency room (ER) with painful symptoms, the staff consults the National Prescription Drug Monitoring Program to learn whether the patient is already being treated with narcotic medications.

In addition, Inova emergency providers are equipped to connect patients with community resources for follow-up and specialist care to help patients find lasting relief from their symptoms. The ER's team of on-call medical specialists helps develop a pain control plan for the patient. And once a patient is discharged from the ER, emergency personnel prescribe non-narcotic medications as a first-line treatment when appropriate.

Across Inova, we are working to reduce opioid addiction by changing the way we think about, and treat, pain.

With an innovative opioid reduction program called "D-Lite", Inova Loudoun ERs (Lansdowne, Leesburg and Ashburn) have reduced physician orders for Dilaudid by an average of 83 percent.

Inova emergency providers are trained to connect patients with community resources for follow-up and specialist care regarding opioid addiction.

Inova Kellar Center

Inova Kellar Center has been meeting the community's need for pediatric and adolescent outpatient behavioral health services for more than 25 years. Inova Kellar Center provides a full continuum of outpatient mental health, substance use disorder treatment services and special education programs for children, adolescents and their families in a convenient family and child-friendly setting.

Inova Kellar Center's services include:

- Outpatient services psychological testing, ADHD assessments, autism assessments, therapy and medication management
- Clinical intervention in-home services, an intensive outpatient program and a partial hospitalization program
- The Kellar School a fully licensed and accredited therapeutic day school that offers special education services for children with an emotional, behavioral, and/or learning disability or other health impairment

In 2017, Inova Kellar Center had more than 40,000 patient encounters.

Mental health disorders are the most common health issues in school-aged children.



children in America has a mental health or learning disorder.



Source: Child Mind Institute (2016)

CANCER SERVICES

Cancer is the leading cause of death in Virginia and the second leading cause nationwide.

Virginia Department of Health (2013)

Inova Life with Cancer®

Increasingly, research shows that a shift in cancer care from a disease-focused approach to a person-centered approach leads to improved quality of life. An approach that addresses not only the physical but also the psychological, educational, social and spiritual needs of patients also has the potential to result in improved survival.

As the psychosocial program of the Inova Schar Cancer Institute, the mission of Inova Life with Cancer is to enhance the quality of life of those affected by cancer by providing information, education and support. This mission is accomplished through the delivery of evidence-based programs to children, adults and families affected by cancer, at no cost (except psychiatry, acupuncture and massage) and regardless of where treatment is received. Inova Life with Cancer is staffed by experienced professionals in the field of oncology, including a psychiatrist/psycho-oncologist, oncology nurse navigators, oncology clinical therapists, art and play therapists, an oncology dietitian and an oncology certified fitness instructor. These professionals provide patients and caregivers education about disease, treatment and side effects including insomnia and cancer-related cognitive impairment.

In addition, clinical therapists provide adjustment-to-illness counseling for adults, children, teens, couples and families. More than 200 psychoeducational, wellness, educational and fitness classes, lectures, and disease-specific support groups are offered monthly to those affected by cancer to learn how to manage the challenges and changes associated with a cancer diagnosis and survivorship. Inova Life with Cancer also partners with medical professionals, acupuncturists, Reiki Masters, certified yoga instructors and massage therapists, among others, to provide evidence-based, holistic care. Programs and services are conveniently offered at the Life with Cancer Family Center and also at Inova Fairfax Medical Campus, Inova Fair Oaks Hospital, Inova Loudoun Hospital and Inova Alexandria Hospital.

In 2017, Inova Life with Cancer hosted 2,800 educational classes and group wellness programs for 16,000 adults, children and adolescents.

In 2017, oncology therapists and oncology nurse navigators provided 21,000 counseling and consultation sessions to 16,000 people affected by cancer.



Inova Life with Cancer programs range from art therapy to meditation, and from cooking classes to research presentations.





All Northern Virginia residents benefit from living close to a world-class healthcare system like Inova. Our health system is the site of first-in-thenation and first-in-the-world therapies and approaches, supported by a robust precision medicine program that helps us tailor treatments to individual patients. From cancer to heart disease, and from neurological disorders to pediatric specialty care, Inova provides access to lifesaving treatments, right here in Northern Virginia.

INNOVATION

Inova Installs World's Smallest Pacemaker

Inova's heart care is renowned throughout the region. In 2017, Inova Heart and Vascular Institute became the only facility in the Washington, DC metropolitan region to earn accreditation in Clinical Cardiac Electrophysiology from the Intersocietal Accreditation Commission.

Inova Heart and Vascular Institute's excellence in cardiac electrophysiology was on display in 2017, when a team led by electrophysiologist Aysha Arshad, MD implanted the world's smallest pacemaker. This procedure was the first of its kind in Northern Virginia.

Pacemakers are devices, generally implanted under the skin, that prevent the heart from beating too slowly. A typical pacemaker is inserted under the skin near the collarbone, and a series of thin wires called leads extends from the pacemaker to the heart muscle.

The device Dr. Arshad implanted, called the Micra, is 93 percent smaller than a traditional pacemaker. Rather than cut into the patient's skin to implant the Micra, Dr. Arshad installed the tiny device by threading a catheter up through the patient's blood vessels and into the heart. The procedure leaves no chest scar, and the Micra's battery life is longer than those of traditional pacemakers.





PATIENT SPOTLIGHT:

Leila Ait Abdedaim Looks Forward to a Bright Future After Advanced Epilepsy Treatment

Leila Ait Abdedaim had struggled with epilepsy since she was a baby in her home country of Morocco, but it wasn't until she came to the United States at age 20 that she got a diagnosis. Unfortunately, Leila's condition was resistant to medications. She tried several different prescriptions in the hope of reducing or eliminating the seizures she suffered, but nothing worked.

"My epilepsy does not respond to drugs, no matter what they are," she said. "I tried everything doctors suggested, but my seizures got worse."

Fortunately for Leila, she came to the Epilepsy Center at Inova Fairfax Medical Campus, which has received a level 4 designation – the highest available – from the National Association of Epilepsy Centers.



The procedure involves inserting a small device into the brain that interrupts a seizure before it begins.

WHAT DOES IT MEAN TO BE A LEVEL 4 EPILEPSY CENTER?

Level 4 epilepsy centers offer the most advanced and comprehensive treatments for epilepsy, including:

- 1. Advanced surgical care
- 2. Intensive neurodiagnostic monitoring
- 3. Extensive medical, neuropsychological and psychosocial treatment
- Complete evaluation for epilepsy surgery, including intercranial electrodes

Neurologist Mohankumar Kurukumbi, MD, the center's medical director, recommended epilepsy surgery for Leila. The procedure involves inserting a small device into the brain that interrupts a seizure before it begins. In 60 to 80 percent of cases, this procedure cures epilepsy. Leila was willing to give it a try.

"To many people, it may sound extreme because this is brain surgery," says Dr. Kurukumbi. "But it's a proven procedure that provides a very good option for those who don't do well with medication. We are proud to have level 4 certification, which represents the highest possible care level and advanced treatment, including many surgical options like vagal nerve simulator, responsive neurostimulation and intercranial electrode monitoring."

Leila was the first to undergo the procedure at Inova, and she has been seizure free ever since.

"I feel amazing," she said. "I got my life back. I can do anything I want without fear of having a seizure and waking up in the hospital with an injury. I feel free."

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