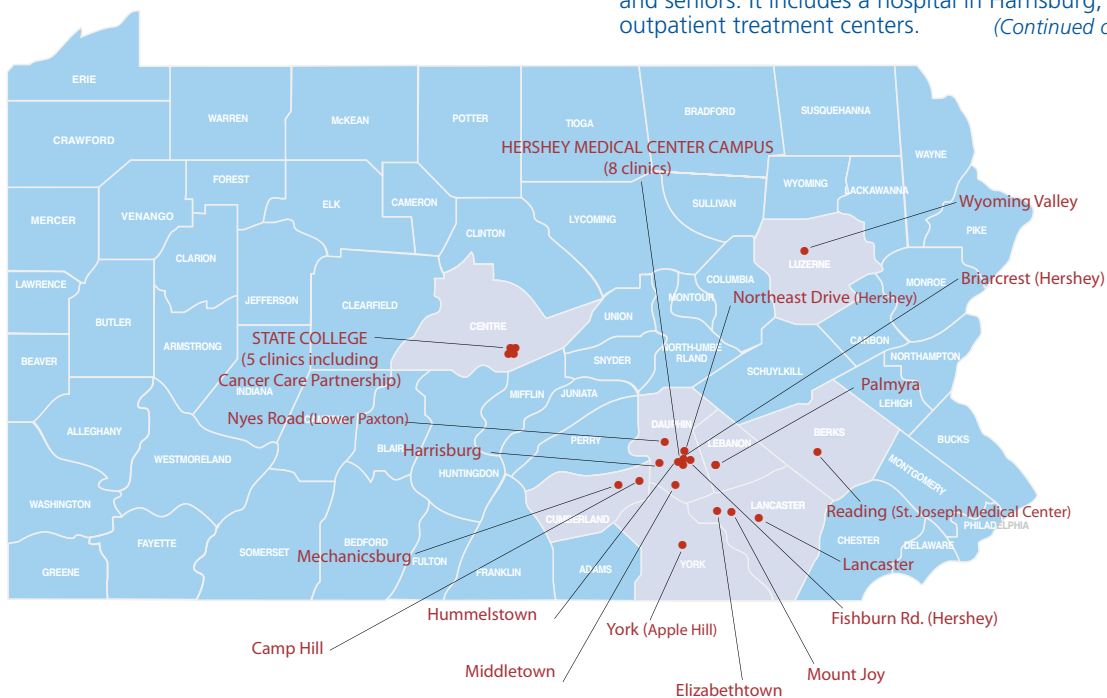


## PENN STATE HEALTH MILTON S. HERSHEY MEDICAL CENTER

- Founded in 1963 through a gift from The Milton S. Hershey Foundation, Penn State Health Milton S. Hershey Medical Center is one of the leading teaching and research hospitals in the country.
- Six institutes: Penn State Cancer Institute, Penn State Heart and Vascular Institute, Penn State Bone and Joint Institute, Penn State Neuroscience Institute, Penn State Clinical and Translational Science Institute, and Penn State Institute for Personalized Medicine.
- 12,000+ employees and a combined budget of approximately \$1.7 billion.
- Three times designated as a Magnet® hospital, and achieved highest level of recognition for nursing excellence from the American Nurses Credentialing Center.
- Second in the nation to use a new robotic surgical device for head and neck surgery. The Flex Robotic System makes it possible to easily access locations in the body that were previously difficult or impossible to reach using minimally invasive techniques.
- Image-guided radiation treatment services, using the advanced technology of our Trilogy™ system and Gamma Knife®, represent the region's first-of-its-kind collaborative approach between radiation oncology and neurosurgery.
- The University Technology Center opened in 2016, greatly expanding Penn State Health's ability to gather and analyze big data that can serve as the foundation for precision medicine and population health.
- The only medical facility in Pennsylvania to be accredited as both an adult and a pediatric Level 1 trauma center.
- Life Lion Critical Care Transport is accredited by The Commission on Accreditation of Medical Transport Systems (CAMTS), a prestigious accreditation held by only six other services in Pennsylvania.
- More than 1,100 primary and specialist physicians and advanced practice clinicians care for patients through the Penn State Medical Group, which includes 63 specialty practices located at 24 clinics in eight central Pennsylvania counties.
- An 98-bed rehabilitation hospital in partnership with Select Medical combines the convenience and comfort of community-based care with clinical expertise and national experience in comprehensive medical rehabilitation, transitional care, outpatient services and wound care.
- Pennsylvania Psychiatric Institute, a partnership with PinnacleHealth, creates specialized mental health treatment programs for children and adolescents, adults and seniors. It includes a hospital in Harrisburg, and two outpatient treatment centers. *(Continued on next page)*



## PENN STATE HEALTH MILTON S. HERSHEY MEDICAL CENTER (Cont'd)

### FAST FACTS (FISCAL YEAR 2017)

Annual admissions Hershey Medical Center and Children's Hospital	29,098	Licensed adult beds	423	Medical Group practices	63
Annual admissions Psychiatric Institute	2,237	Licensed pediatric beds	128	Life Lion helicopter transports	1,174
Annual admission Rehab Hospital	1,610	Licensed adult psychiatric beds*	80	Life Lion critical care ambulance transports	741
Annual outpatient visits	1,116,012	Licensed pediatric psychiatric beds*	16	Faculty physicians/advanced practice clinicians	1,300+
Annual emergency visits	74,526	Licensed adult rehab beds**	88	Residents and fellows	586
Births	2,074	Licensed pediatric rehab beds**	10	Nurses	2,547
Total surgical cases	33,145	Neonatal ICU and Critical Care Nursery beds	42	Total staff	12,000+

\* at Pennsylvania Psychiatric Institute

\*\* at affiliated rehabilitation hospital

## PENN STATE CHILDREN'S HOSPITAL

- Opened in 2013, the five story building contains five pediatric operating rooms, a pediatric cardiac catheterization lab, blood banks and a pediatric cancer pavilion. All told, the Children's Hospital has 128 beds to serve the children of our community. A three story addition is now underway, to be completed in 2020.
- The region's only Children's Hospital fully equipped to treat the most severely ill and injured children with the highest level neonatal intensive care unit (Level IV) and the highest level pediatric trauma center (Level I). The Children's Hospital also performs the region's only bone marrow stem cell and kidney transplants for pediatric patients.
- Supported by more than 200 pediatric medical and surgical specialists renowned in disciplines such as cancer, cardiology, orthopaedics, surgery and critical care.

- Features the only fully equipped and staffed academic level IV (highest level possible) Neonatal Intensive Care Unit (NICU) between Pittsburgh and Philadelphia.
- Selected as one of Aetna's Institutes of Excellence™ Pediatric Congenital Heart Surgery facilities.
- Named a national leader in five pediatric specialties (cancer, neonatology, neurology and neurosurgery, orthopaedics, and urology) in U.S. News & World Report's 2016 Best Children's Hospitals rankings.
- Our pediatric cardiac surgery program ranks among the nation's best, according to the Society of Thoracic Surgeons.



## PENN STATE CANCER INSTITUTE

- The region's only comprehensive cancer center, with access to internationally recognized cancer specialists and scientists delivering a multidisciplinary approach and advanced medical technology.
- The Institute's radiation oncology program is accredited by the American College of Radiology and the outpatient program is also now certified by Quality Oncology Practice Initiative through the American Society of Clinical Oncology.
- Physicians and researchers are at the forefront of personalized cancer care to prevent and treat cancer, including personalized risk assessment and counseling, genetic and technological screening for cancer, personalized monitoring and dosing of chemotherapy.

Unique clinical trials are available for patients with either early stage or advanced cancer.

- Earned Outstanding Achievement Award from the Commission on Cancer of the American College of Surgeons.
- Designed to foster collaboration between physicians and scientists devoted to providing comprehensive cancer care and discovering new treatments and cures, the ground level and first two floors are dedicated to patient care, while the top two floors house research labs.



## PENN STATE HEART AND VASCULAR INSTITUTE

- Central Pennsylvania's only heart transplant center.
- Offers Joint Commission-accredited programs in heart failure and in implanting ventricular assist devices for destination therapy in patients with advanced heart failure.
- Facilities include two hybrid operating rooms, allowing staff to use medical imaging and advanced surgical

techniques to optimize and combine therapies.

- A regional center for extra corporeal membrane oxygenation (ECMO) therapy for patients in severe cardiogenic shock or pulmonary failure.



- More than 60 providers across cardiology, cardiac surgery, vascular surgery and interventional radiology.
- A team of internationally recognized ECMO physicians able to travel throughout the commonwealth to start patients on ECMO earlier and expedite transfer with continued therapy management, providing increased survival rates for these critically ill patients.
- Comprehensive valve clinic with treatment options

including surgical repair and replacement and transcatheter aortic valve replacement (TAVR).

- Percentage of radial artery catheterizations performed ranks well above the national average.
- Recognized with the American Heart Association's Get With the Guidelines® Gold Plus award for heart failure care.

## PENN STATE NEUROSCIENCE INSTITUTE

- Multi-disciplinary and comprehensive neuroscience care and follow up including research and treatment for brain tumors, stroke, aneurysms, ALS, carotid artery disease, dementia, rehabilitation, and more.
- Top neuroscience destination for children and home to the only three board-certified pediatric neurosurgeons between Pittsburgh and Philadelphia.
- Leading edge technology such as Onyx HD®, Pipeline Embolic Device™, NeuroPace, Gamma Knife® Perfection™, Laser ablation and Robotic Neurosurgery. Joint Commission-certified Comprehensive Stroke Center, the highest level of stroke certification, which recognizes the significant resources in infrastructure, staff,

and training that stroke centers must have to provide state-of-the-art, complex stroke care.

- LionNet™, our regional stroke care network, offers real-time video consults between doctors at 16 central Pennsylvania emergency departments and Penn State stroke specialists to provide faster diagnosis and treatment for strokes.
- Recipient of the American Heart Association/American Stroke Association Get With The Guidelines® Stroke Gold Plus award for seven consecutive years.



## PENN STATE BONE AND JOINT INSTITUTE

- Leader in the care of patients with disorders of the bones, joints and spine, providing innovative care to adults and children with common to the most complex disorders.
- Collaborative approach with specialists in orthopaedics, sports medicine, spinal disorders, hand surgery, metabolic bone disease and osteoporosis, rheumatology, radiology, chronic pain management and therapy services.
- Musculoskeletal oncology program specializes in the diagnosis, treatment and reconstruction of benign and malignant tumors affecting the musculoskeletal system.

- Internationally recognized research program, within the Division of Musculoskeletal Sciences, focused on developing novel therapeutic approaches to musculoskeletal disease.

- Comprehensive sports medicine program specialists provide expert care to Penn State Athletics in State College and Harrisburg; several professional teams, including the Hershey Bears and Harrisburg Senators; and local colleges and high schools.



## PENN STATE COLLEGE OF MEDICINE

- Penn State College of Medicine's academic programs are highly competitive. Nearly 1 in 5 individuals applying to a U.S. medical school applies to Penn State College of Medicine, with nearly 11,000 applicants competing for 150 openings in the class of 2022.
- The College's master's level physician assistant program, launched in 2014, garnered nearly 4,680 applicants for 30 openings in the Class of 2020.
- The College of Medicine is one of 11 schools to receive a five-year American Medical Association grant to accelerate change in medical education. First-year medical students are now being trained as patient navigators and study the science of health systems.
- The College of Medicine offers graduate degree programs in anatomy, bioengineering, biomedical sciences, biostatistics, homeland security, laboratory animal medicine, molecular and cellular integrative biosciences, neuroscience, physiology, public health and public health sciences.

- Nursing students from Penn State's School of Nursing rotate through Hershey Medical Center for clinical courses, and students from other Penn State health-related programs and other institutions come to Hershey for their clinical experience. The extended B.S. degree program for nurses is offered in conjunction with the School of Nursing.
- The College of Medicine and the School of Nursing also collaborate on a growing interdisciplinary curriculum that allows medical, physician assistant and nursing students to learn some clinical skills together, facilitating better communication between the professions.
- The University Park Regional Campus of Penn State College of Medicine is a collaborative effort between Penn State-University Park, Hershey Medical Center, the College of Medicine, Mount Nittany Health, and State College community providers. The regional campus offers eight



*(Continued on next page)*

## PENN STATE COLLEGE OF MEDICINE (Cont'd)

core clerkships in family and community medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, psychiatry, surgery and underserved medicine. The campus also offers a wide variety of clinical electives.

- In 2017, the Regional Campus introduced a full medical school curriculum at University Park, with 12 student in the inaugural class. More than 50 third and fourth year medical students complete their clinical rotations at the University Park Regional Campus.
- In 2015, the Regional Campus launched a new three-year residency program in family and community medicine that brought six new family medicine doctors to this rural region, enhancing access to care. Each year, six new physicians join the residency for a total of 18 family medicine residents now practicing in State College.

- Penn State College of Medicine provides educational opportunities for medical and graduate students interested in international health, including challenges that commonly present a greater burden to disadvantaged populations. We have partnerships in countries around the world, including Ghana, Peru, Zambia, Taiwan, Australia and Ecuador.
- The College of Medicine now offers accelerated medical education programs in family and community medicine, emergency medicine, internal medicine, orthopaedics and neurosurgery. Students complete their medical education in three years rather than four years, then enter a Penn State medical residency training program.



## RESEARCH AT PENN STATE COLLEGE OF MEDICINE AND PENN STATE HEALTH:

- In FY17, faculty and staff generated \$100 million in external research support. Approximately two thirds of that funding comes from the National Institutes of Health.

### Research highlights:

- Penn State Health Milton S. Hershey Medical Center will serve as the lead site for a \$7 million, five-year, multi-center clinical trial aimed at identifying ways to delay the progression of the autoimmune disease Lupus in patients who are most at risk for developing it. The grant comes from the National Institute of Arthritis and Musculoskeletal and Skin Diseases, an arm of the National Institutes of Health.
- Researchers found that GM-CSF, a protein that modifies the immune response to the flu, may also help reduce lung inflammation and improve survival during influenza. Researchers studied the survival and lung function of mice with influenza in the lab and found that mice given large amounts of a special cytokine called GM-CSF — molecules that warn other cells of an infection or other trauma in the body — had better survival and lung function than the other mice. The results, published in *Respiratory Research*, suggest that GM-CSF could be a potential therapeutic strategy for treating the flu.
- College of Medicine researchers hold one of the National Institutes of Health's longest continuously funded projects in the country. For more than 45 years, investigators have delved into the mysteries of skeletal muscle and what causes tissue to rebuild or waste away. Each time a discovery is made, it leads to new questions. Their findings reach to outer space, as adventurers blast off in rockets. It affects soldiers in oven-like desert heat. It touches cancer patients and aging Baby Boomers too weak to rise from their beds. The NIH last year awarded another continuation grant.
- Diagnosing a concussion can sometimes be a guessing game, but College of Medicine researchers discovered that clues taken from small molecules in saliva may be able to help diagnose and predict the duration of concussions in children. A story in *JAMA Pediatrics* revealed that researchers found that the presence of certain microRNAs in the saliva of concussion patients was able to better identify concussions, and more accurately predict the length of concussion symptoms, than relying solely on patient surveys.
- A \$9.7 million National Institutes of Health grant aims to improve the lives of the millions of people living with peripheral arterial disease (PAD). When exercising, the exercise pressor reflex increases blood pressure to promote blood flow and oxygen to muscles. However, this reflex may be overly active in people with PAD. A multidisciplinary team of researchers will study blood pressure increases in patients with the disease and whether the cause is abnormally activated exercise pressor reflex.
- In 2017, Penn State College of Medicine created the Center for Medical Innovation (CMI). The Center provides guidance to Penn State Health, Penn State College of Medicine and the scientific community to advance innovative research through the commercialization pipeline towards new products and services that positively impact human health.
- College of Medicine research in the 1980s led by John Kreider and Mary Kay Howett, and funded by the Jake Gittlen Cancer Research Foundation, helped lead to the first vaccines against the human papilloma virus (HPV).



**PennState Health**  
Milton S. Hershey Medical Center



**PennState**  
College of Medicine

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