



Penn Medicine

• FACTS & FIGURES

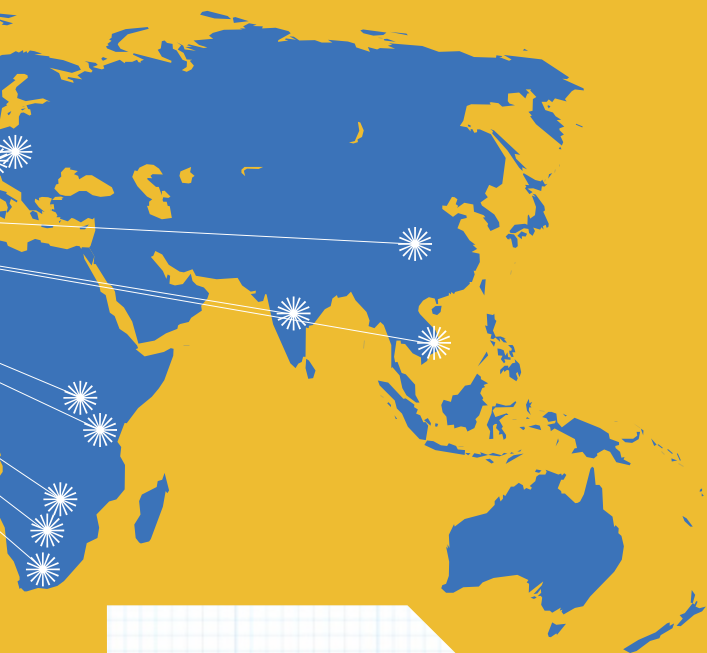
2012



**Penn faculty
and students
are researching
diseases, educating
physicians, and
treating patients in
over 23 hospitals
and mobile clinics
around the globe.**

Serving the World

Recent locations for Penn Medicine's faculty and student outreach include: Argentina, Austria, Botswana, China, the Dominican Republic, Ecuador, El Salvador, France, Ghana, Guatemala, India, Malawi, Mali, the Netherlands, Nicaragua, Poland, Panama, South Africa, Tanzania, Uganda, United States, Vietnam, and Zambia.



Penn Medicine

Penn Medicine is among the most prestigious academic medical centers in the world. Its international prominence is built on an ongoing tradition of breakthrough discoveries and innovations, excellence in training tomorrow's physicians and scientists, and safe and compassionate patient care. In addition to offering the most advanced medical care to our patients, Penn Medicine's programs and projects extend beyond our institution to vulnerable populations in communities ranging from residents in our own West Philadelphia backyard to those in need around the world.

About Penn Medicine

Penn Medicine comprises the Perelman School of Medicine and the University of Pennsylvania Health System.

Research

Penn's Perelman School of Medicine is consistently among the nation's top three recipients of federal funding from the National Institutes of Health. Penn's physicians and scientists focus on research that utilizes an interdisciplinary approach to understand the fundamental mechanisms of disease, leading to new strategies for treatments and cures.

The most challenging research questions and problems of our time require knowledge and tools spanning different disciplines and various professional perspectives. A University of Pennsylvania initiative called Penn Integrates Knowledge (PIK) engages senior research scientists and scholars whose search for solutions crosses traditional

The Search for Solutions:

Scientists at Penn Medicine work at the frontiers of medical research, combining ingenuity with innovative technology to discover new approaches to treat nature's most complex and vexing medical maladies.

Epigenetics:


- Epigenetics is the study of how factors other than DNA affect gene expression. Recent discoveries show that these chemical alterations play an important role in obesity, diabetes, and cancer by controlling metabolism. On many fronts, Penn researchers are taking what is learned about this intricate control of gene expression to better understand and treat disease.

Chronobiology:

- Researchers are investigating the way circadian rhythms govern various types of biological function, including cycles of disease and response to medication. Penn research has linked blood pressure to the body's daily internal rhythm, and the variation of heart attack and stroke. Other research into rhythm-linked biological processes includes fat production by the liver and the restorative benefits of sleep.

Cell Regeneration:

- Researchers are exploring how the expression of a microRNA cluster could reprogram mouse and human cells to become capable of developing into different types of cells or tissues in the body, in order to regenerate a person's own damaged cells.



academic disciplines. Currently, there are 13 PIK professors associated with the Perelman School of Medicine and other schools of the University. In addition, faculty from 23 institutes and centers at Penn Medicine work together with their counterparts from the 11 other schools at the University of Pennsylvania to collaborate in such disparate areas as aging, neuroscience, and the impact of health care policy.

Education

Established in 1765 as the nation's first medical school, Penn's School of Medicine, now the Raymond and Ruth Perelman School of Medicine, continues a rich tradition of providing pre-eminent training and education. The School is currently ranked #2 in *U.S. News & World Report's* survey of the nation's finest research-oriented medical schools. Penn Medicine continues to provide its students with an innovative, comprehensive curriculum designed to fit an individual's career goal, be it research, clinical practice, or a dual degree program. In addition, our strong research programs provide our students with the opportunity to participate in a vibrant intellectual environment that generates new knowledge and advanced medical care.

Patient Care

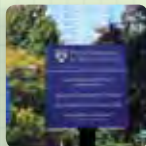
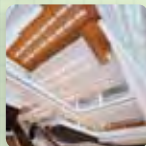
Penn Medicine's physicians, nurses, and staff provide exceptional personalized care to patients with a broad range of medical conditions, including cancer, heart and lung disease, neurological disorders, and diseases of aging. Working with state-of-the-art equipment, our highly trained physicians are continually working together to innovate procedures and develop novel techniques to care for our patients. Our team model approach to health care assures that each patient's welfare is addressed from multiple medical perspectives, typically involving physicians, nurses, pharmacists, social workers, and rehabilitation specialists. Critical care units at Penn Medicine have continuously been recognized by leading health care associations for their excellence in patient care.



Penn Medicine Clinical Facilities

The University of Pennsylvania Health System includes:

- **The Hospital of the University of Pennsylvania (HUP)** – annually recognized as one of the nation's best hospitals by *U.S. News & World Report*.
- **Penn Presbyterian Medical Center (PPMC)** – Consistently recognized for delivering superior patient safety and quality care, and as a center of excellence for cardiac surgery, cardiac care, orthopaedics, and ophthalmology.
- **Pennsylvania Hospital (PAH)** – the nation's first hospital (co-founded by Benjamin Franklin in 1751), whose many expert clinical programs include the Women's Cardiovascular Center, the Center for Bloodless Medicine and Surgery, orthopaedics and maternity.



- **The Perelman Center for Advanced Medicine**, is a state-of-the-art, 600,000-square-foot outpatient facility containing 321 exam rooms, with diagnostic and treatment facilities designed to be in close proximity creating an ideal environment for patient-focused care.
- **The Roberts Proton Therapy Center**, the largest integrated radiation oncology center in the world, targets a beam of protons traveling at near light speed to the tumor without many of the side-effects of conventional therapy.
- More than 70,000 outpatient visits occur each year in the **Abramson Cancer Center**, with more than 9,000 inpatient stays. Since 1973, the Center has been designated a Comprehensive Cancer Center by the National Cancer Institute, one of 40 such Centers in the nation.
- Other Penn Medicine facilities and health care services include: **Penn Medicine Rittenhouse**, offering inpatient rehabilitation and outpatient care; 29 comprehensive outpatient facilities in southeastern Pennsylvania and southern New Jersey; a primary care network; and **Penn Home Care & Hospice Services**, which offers a full range of home health care needs by partnering with Penn Wissahickon Hospice, Penn Care at Home, and Penn Home Infusion Therapy.

NCI
CCC[®]

A Comprehensive Cancer
Center Designated by the
National Cancer Institute

Abramson
Cancer Center

.....
ONE
of 40
in the U.S.



Penn Medicine Profile | FY11

Annual Operating Revenue \$4.3 billion

Research & Education*

Total Sponsored Program Awards . . . \$669.5 million

NIH Awards \$479.3 million

State Research Funding \$8.5 million

New Patents Awarded 48

Full-Time Faculty 1,927

MD Students 746

PhD Students 753

Residents and Fellows 1,133

Postdoctoral Fellows 724

Philanthropy

Gifts \$335 million

Donors 16,794

Patient Care*

	Penn Medicine Total	HUP	PAH	PPMC
Licensed Beds	1,714	814	569	331
Physicians	2,247	1,713	736	828
Adult Admissions	78,262	37,849	23,603	16,810
Outpatient Visits	1,589,733[‡]	1,405,490	84,966	99,277
Emergency Dept. Visits	132,745	60,968	33,232	38,545
Births	9,222	4,395	4,827	n/a

Facilities & Employees*

	Penn Medicine Total[†]	PSOM	HUP	PAH	PPMC
Employees	21,069	5,376	6,469	2,774	1,720
[‡] Net Sq. Ft of Building Space	6.6 million	2.55m	1.86m	957,000	617,900

* Figures as of June 2011

‡ Includes CCA/CHCA.

† Includes UPHS and PSOM.

[‡] **PSOM:** 10 interconnected buildings on the core campus, plus 27 sites in and around West Philadelphia.

HUP: 16 interconnected buildings. **PAH:** 15 buildings. **PPMC:** 10 interconnected buildings.

Key to abbreviations used in table:

PSOM: Perelman School of Medicine

HUP: Hospital of the University of Pennsylvania

PAH: Pennsylvania Hospital

PPMC: Penn Presbyterian Medical Center

Penn Medicine is an internationally recognized leader in the discoveries that advance science and pave the way for new therapies and procedures to improve human health.

- Penn Medicine's research enterprise encompasses every major area of biomedical investigation.
- In the 2011 fiscal year, the National Institutes of Health (NIH), including stimulus funds, awarded the Perelman School of Medicine \$479.3 million.
- A total of 75 individuals at Penn Medicine are elected members of the Institute of Medicine, one of the highest honors in medicine.

Connecting Discovery, Learning, and Patient Care

The basic and clinical research findings emerging from Penn Medicine's laboratories and hospitals advance the treatment of a wide range of diseases and medical conditions, as well as provide the foundation on which many of medicine's next generation of cures will be developed.

Penn's culture has always encouraged close collaboration between basic scientists and clinicians. From this fruitful partnership, new approaches and innovative technologies have developed, many of which identify the molecular basis of disease that will be translated into new and enhanced treatments.

This commitment to combining discovery, learning, and patient care can be seen in the physical integration of many of Penn Medicine's facilities. For example, the \$350-million, **Ruth and Raymond Perelman Center for Advanced Medicine** is designed to deliver real-time medicine that promotes face-to-face consultations between clinicians, radiologists and pathologists working together to arrive at a diagnosis and craft a treatment plan during a single patient visit.

Connected to the Perelman Center is the recently opened 14-story **Translational Research Center** (TRC), a \$353 million state-of-the-art basic research facility built with an open, flexible design to encourage maximum interaction between scientists and physicians to integrate basic and clinical research.



New Knowledge, Better Tools for Patient Care:

Breast Cancer

- The painful limb-swelling condition, lymphedema, which often follows breast cancer treatment, could be significantly reduced through a regimen of weight lifting, reversing decades of medical advice that survivors should avoid lifting anything heavier than five pounds.

Heart Disease

- A new measurement to assess HDL function is more closely associated with protection against heart disease than a simple measurement of HDL cholesterol levels, providing physicians with a potential new tool to intervene early and effectively.

Head & Neck Tumors

- Penn surgeons pioneered Trans-Oral Robotic Surgery (TORS), a minimally invasive technique to remove tumors of the head and neck, safely, quickly and with significantly less trauma to the patient than current surgical procedures.

Sharing approximately 75,000 square feet under both the TRC and the Perelman Center is the **Roberts Proton Therapy Center**, a \$140 million facility housing five gantries, each containing a 90-ton rotational machine designed to deliver a therapeutic beam of protons to tumors with unprecedented accuracy without harming nearby healthy tissue or organs.

Some recent examples of translational research breakthroughs are:

- Genetically modified “serial killer” immune cells that obliterate tumors in patients with chronic lymphocytic leukemia.
- New biomarkers for detecting Alzheimer’s disease.
- Immune therapy for pancreatic cancer that targets the dense tissues surrounding tumors, similar to attacking a brick fortification by dissolving the mortar in its wall.
- Gene therapy to help restore vision in a congenital form of blindness in children and adults.

Training Tomorrow's Leaders

Penn Medicine is at the forefront of developing forward-thinking educational programs that prepare medical students for the challenges of caring for patients. Penn's curriculum introduced many innovations that have now been incorporated by medical schools across the country, including small group instruction, self-directed learning, and course flexibility. Just as the art and science of medicine is rapidly changing so, too, is the education of tomorrow's healers and scientists.

Among the programs integrated into the curriculum:

- Simulation training in state-of-the-art medical techniques and procedures.
- Interprofessional interaction in multi-disciplinary treatment and practice settings.
- Standardized patient program that helps students develop skills in interviewing and examination techniques.
- The Longitudinal Experience to Appreciate Patient Perspective (LEAPP) program, to teach the biopsychosocial models of chronic illness.
- Curricula that focuses on preparing physicians for 21st century medicine, including health care systems decision-making, cultural competency, and evidence-based medicine.

Today, Penn Medicine provides a gateway for medical students to explore vast areas of educational offerings within the entire University of Pennsylvania community, as well as study rotations through the Children's Hospital of Philadelphia and the Philadelphia VA Medical Center.



A Historic Gift

In May 2011, Raymond and Ruth Perelman's \$225 million gift to the School of Medicine was the largest gift not only to the University of Pennsylvania, but also to name a school of medicine in the United States. This extraordinary contribution follows a long record of generosity from the Perelman family to Penn Medicine and the City of Philadelphia.

Penn Medicine's interdisciplinary educational programs and dual degrees include:

- MD/PhD program which enrolls **157** students in **twelve** graduate groups.
- MD/Master of Bioethics (MBE), MD/Master of Business Administration (MBA), MD/Master of Public Health (MPH), MD/Master of Science in Clinical Epidemiology (MSCE), MD/Master of Science in Health Policy Research (MSHP), MD/Master of Science in Translational Research (MTR), MD/JD option.
- Additional educational offerings include Biomedical Postdoctoral programs, Certification and Non-Degree Programs, Patient Oriented Research Certification, Clinical Research Certification program, Clinical Neurosciences Track (CNST), The Robert Wood Johnson Clinical Scholars Program.
- Penn Medicine's PhD training programs enroll **597** full-time pre-doctoral students in programs in Biochemistry & Molecular Biophysics, Cell & Molecular Biology, Epidemiology & Biostatistics, Genomics & Computational Biology, Immunology, Neuroscience, and Pharmacology.

Clinical Experiences

Penn's medical students are provided with both inpatient and ambulatory clinical care experiences throughout their training. Students acquire real-life, hands-on experience working with patients and their families at a variety of care settings, including:



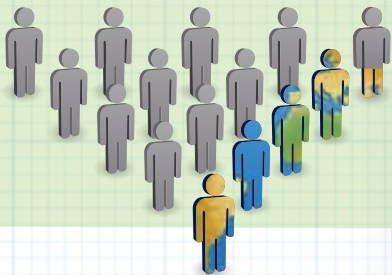
- **10** tertiary/quaternary hospitals used for inpatient clinical training.



- **60** ambulatory sites including individual MD outpatient practices, group practices, and multidisciplinary clinics throughout the Delaware Valley used for all required clerkship and elective experiences.



- **5** community health clinics for the underserved run by students and faculty in the Philadelphia area.



Global Engagement

Approximately one-third of each medical school class engages in one or more global health education and training opportunity through the Perelman School of Medicine's Global Health Program.

The program offers students the chance to participate in the global medical community through:

- Education and training, particularly international rotation opportunities, which are available through Penn's partnerships with institutions in Guatemala, Peru and other countries.
- The Botswana-UPenn Partnership, where Penn faculty and medical students take a broad interdisciplinary approach to help train health-care personnel throughout Botswana and build capacity in response to the HIV/AIDS epidemic, and help establish a medical school.
- Opportunities to interact with students from Botswana, Guatemala, and Peru while these students are in Philadelphia. Partnerships with organizations such as the World Health Organization and the International Clinical Epidemiology Network (INCLIN).
- Service and clinical programs that promote global health by serving immigrant populations, such as Puentes de Salud and the Refugee Clinic at Penn Center for Primary Care.



PATIENT CARE



The University of Pennsylvania Health System (UPHS) includes three hospitals in Philadelphia (the Hospital of the University of Pennsylvania, Penn Presbyterian Medical Center, Pennsylvania Hospital), Penn Home Care and Hospice Services, as well as multiple outpatient facilities and service programs throughout the region. Penn Medicine physicians work hand-in-hand with their counterparts at the Children's Hospital of Philadelphia in such areas as kidney and liver transplant, as well as treating disorders affecting newborn babies, and diseases of the eye, digestive system, and liver. Penn Medicine also partners with the Philadelphia VA Medical Center to provide patient care and conduct research.


Penn Medicine's commitment to excellence in patient care is reflected in the many honors we receive:

- HUP has been recognized as one of the top 10 "Honor Roll" hospitals by *U.S. News & World Report*.
- Penn Medicine physicians are consistently leaders in *Philadelphia* magazine's annual "Top Docs" issue. In 2011, Penn Medicine had the most recommended physicians in the "Top Docs" list of any hospital listed.
- HUP Nursing is among the finest in the nation, having been awarded Magnet status—"the highest institutional honor awarded for nursing excellence"—from the American Nurses Credentialing Center (ANCC).
- Penn's Abramson Cancer Center was rated "exceptional"—the highest possible rating—from the National Cancer Institute in its competitive funding review in 2010.



Hospital of the
University of
Pennsylvania

TOP
10



Penn Medicine is among the world's leaders in numerous areas of clinical medicine.

- Penn Medicine's hand transplant program, established in 2010, completed the region's first bilateral hand transplant. Working closely with their partners at Gift of Life Donor Program in 2011, a team of 12 surgeons, three anesthesiologists and 15 nurses performed the 11-and-a-half hour procedure, which is Penn's first venture into the emerging field of Vascularized Composite Allograft Transplantation (VCA).
- Penn's team of neurologists and psychiatrists developed the first new treatment for depression in a decade, targeting its underlying pathology with a drug that prevents serotonin reuptake, like traditional SSRI, and also activates an impaired receptor.

Commitment to Quality and Patient Safety

Penn Medicine is committed to providing world-class care that is firmly rooted in best practices and based on the practice of rigorous evidence-based medicine. Quality improvement and patient safety are primary goals that are continuously reinforced at all levels of the institution.

Penn Medicine's Blueprint for Quality and Safety, a system-wide strategy for quality, safety and satisfaction, continues to make significant and sustained improvements. Achievements include drastically reducing health care-associated infections, preventing medication errors, and lowering rates of readmission to the hospital.

Penn's innovative Unit Based Clinical Leadership (UBCL) model brings together collaborative teams comprising physicians, nurse managers, quality coordinators, and nurse educators in patient units at each of Penn Medicine's hospitals. Working together, UBCL teams are responsible for innovative quality improvements that help ensure the highest level of care. Penn Medicine is the only hospital to have a Center for Evidence-Based Practice (CEP), a specially trained team of experts that perform independent and objective evaluations of drug, device, process of care, or other high-impact clinical areas to produce clinical guidelines for the Health System.

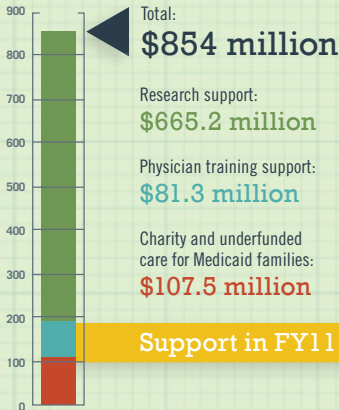
Penn Medicine in the Community

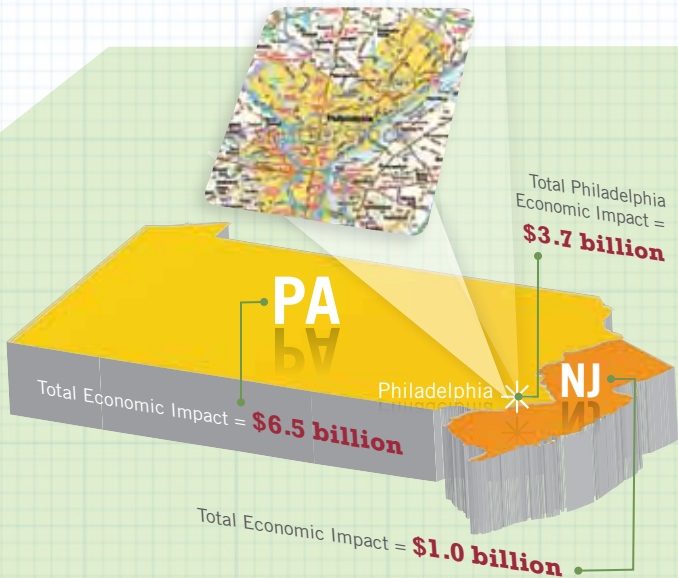
Fulfilling Our Responsibility

Improving lives and health in underserved communities throughout the Philadelphia area is among Penn Medicine's highest priorities. Every day, Penn's physicians, nurses, medical students and staff volunteer their knowledge and skills to benefit the underserved and vulnerable residents in our community. Among the many programs and projects in which we partner with our local community are working with local schools to operate free neighborhood clinics, helping low-income residents with primary care health services, serving as a major source of care and preventive education for the area's HIV community, and providing care and resources for people who are homeless. Through partnerships with the City of Philadelphia's Department of Health, we provide specialty care for neighborhood residents in need, and Penn Medicine physicians also provide direct patient care in the city's district health centers.

Through Penn Medicine's many community-based programs in the region, in fiscal year 2011, we contributed \$107.5 million in uncompensated care, \$81.3 million in physician training support, and \$665.2 million in research support. Forty-seven percent of patients served by our emergency department are uninsured or covered by Medicaid.

To learn more, visit PennMedicine.org/community.





A Pillar of the Region's Economy

At a time of economic volatility, Penn Medicine contributes to the stability of the region by creating new jobs and attracting new businesses to the area.

In 2011, Penn Medicine reported a total annual economic impact of more than \$6.5 billion on the Commonwealth of Pennsylvania, including:

- \$2.83 billion in local wages and purchase of goods and services.
- \$3.67 billion of economic activity generated by other organizations and businesses supported by Penn Medicine.

Penn Medicine also delivered a total economic benefit of more than \$3.7 billion to the economy of Philadelphia and more than \$1 billion to the economy of New Jersey.

Penn Medicine is a world-renowned academic medical center dedicated to discoveries that advance science, to outstanding patient care throughout the world, and to the education of physicians and scientists who carry on our legacy of excellence.



Penn Medicine

Department of Communications

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