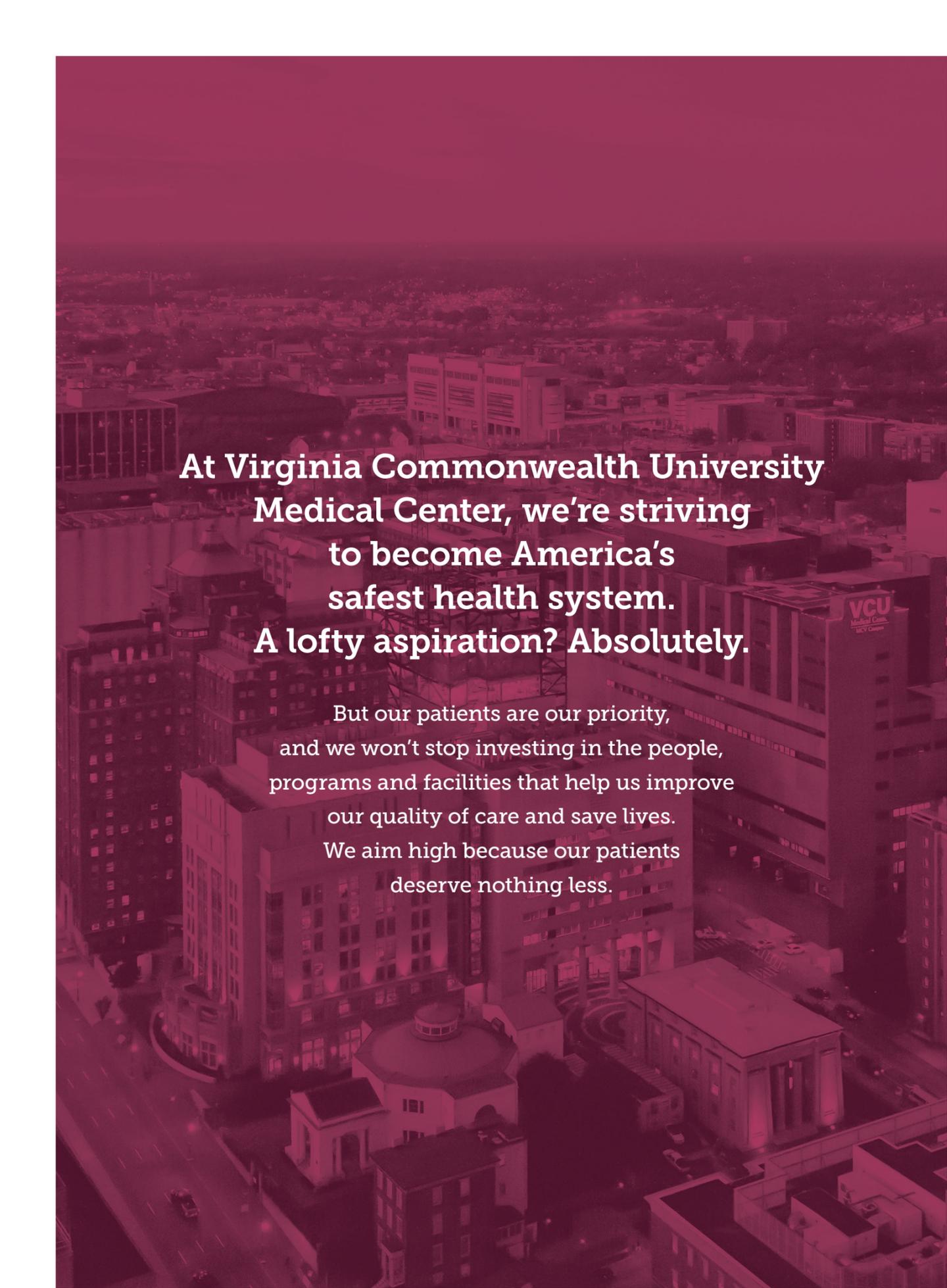




VCU Medical Center
2013 Annual Report



**At Virginia Commonwealth University
Medical Center, we're striving
to become America's
safest health system.
A lofty aspiration? Absolutely.**

But our patients are our priority,
and we won't stop investing in the people,
programs and facilities that help us improve
our quality of care and save lives.
We aim high because our patients
deserve nothing less.

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From the Leadership

"Quality and safety drive our vision, which is propelled by the best people. ..." These words are lifted directly from our vision statement for VCU Medical Center. Further, our vision statement speaks directly about pre-eminence, superior value, contributions of all members of the health care team, and using leading-edge techniques and innovation in education. These would be simply words on a page unless they are directly acted upon and clearly demonstrated. The stories and related information in this year's annual report reflect the active focus on our vision and validate our lofty aspirations of excellence.

In short, our focus is on delivering safety and quality care to every single patient. "Safety First, Every Day" is not simply an initiative. It is a fundamental and foundational commitment to become America's safest health system, as demonstrated by achieving zero events of preventable harm to patients, team members and visitors.

Safety and quality are our priorities everywhere. For example, the pioneering use of clinical data from our electronic health record spurred the creation of novel early warning systems that actively alert care providers to critical changes in our patients in the hospital. This system enables providers to anticipate need, act swiftly and save lives.

Another dimension of our steadfast pursuit is represented by an innovative program for those patients who are



the sickest and require the most-complex treatments by surrounding them with the talents of a multidisciplinary care team. The Complex Care Clinic puts the patient at the center and then coordinates the unique and vital skills of all members of the care team — doctors, nurses, pharmacists, therapists and social workers. The success of this program is not merely demonstrated by impressive statistics, but most importantly by the patients' lives transformed, such as the case of Gwendolyn Ward, about whom you can read later.

Our commitment to safety and quality is focused on the long term. This is demonstrated by educating and preparing our students in new and inventive ways that will give them the skills and experiences essential for delivering high-quality, safe and team-based care to patients for generations to come. The teaching modalities we use range from modern, high-tech simulation equipment to talented actors from our VCU School of the Arts who serve as practice patients.

These examples provide a mere glimpse of the tremendous efforts and contributions our fellow team members make here at VCU Medical Center. We are honored and grateful to be part of this amazing team that brings to life our mission and vision of being America's safest and highest-quality health system.

Sincerely,

Michael Rao, Ph.D.
President
VCU and VCU Health System

Sheldon M. Retchin, M.D., M.S.P.H.
CEO, VCU Health System
Senior Vice President, VCU Health Sciences

Michael Rao, Ph.D.
President, VCU and
VCU Health System



John F. Duval
CEO, MCV Hospitals,
VCU Health System



John D. Ward, M.D.
President, MCV Physicians,
VCU Health System



**Cecil B. Drain, Ph.D.,
CRNA, FAAN, FASAHP**
Dean, VCU School of
Allied Health Professions



Victor A. Yanchick, Ph.D.
Dean, VCU School of Pharmacy



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**Jerome F. Strauss III,
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**Jean Giddens, Ph.D.,
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D.M.D., M.S.**
Dean, VCU School of Dentistry,
and associate vice president,
faculty affairs, VCU Health Sciences



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Culture shift sets the bar sky-high for patient safety

Safety First, Every Day



John F. Duval

In 2013, VCU Medical Center marked five years since "Safety First, Every Day" began, bolstering the medical center's mission to become America's safest health system with the goal of zero events of preventable harm to patients, team members and visitors.

"We're doing this because it's the right thing to do for our patients, visitors, staff and all who enter our facilities" said John F. Duval, CEO of MCV Hospitals. "We are not content to be simply better than average in safety. We want to achieve the very highest standards every minute of every day."

L. Dale Harvey, M.S., R.N., director of the Department of Performance Improvement, and her team implemented "Safety First, Every Day."

"We decided that as an academic medical center we could not only set a new standard of excellence for safety and quality, but we could lead the nation in terms of teaching the next generation of health care professionals the behaviors and work processes that are necessary for safety," she said.

By investigating how high-reliability industries such as nuclear power and aviation manage their safety systems, the medical center adopted the science of safety to ensure that it advances a culture of high-reliability health care.

"The leaders and team members of those organizations are constantly looking at how they can do things better," Harvey said. "That's the culture that we've created here. We're taking a critical eye to how we do things with staff questioning, 'Is this the best way?' and leaders supporting the change."

Since the inception of "Safety First, Every Day," more than 12,000 staff members have been trained in safe behaviors and error-



Reduction in serious safety event rate

Hand hygiene compliance

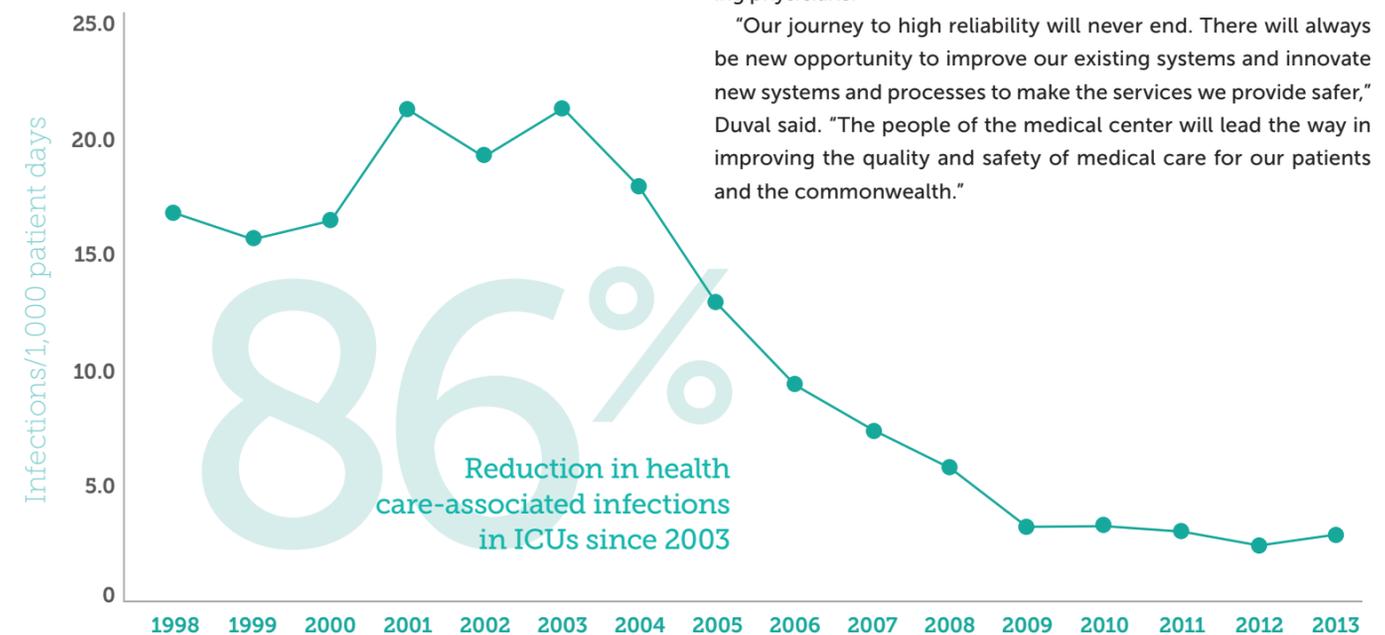
prevention tools. The Safety Coach program has also expanded to 150 coaches, who provide real-time feedback and support to staff on the use of safe behaviors and tools. Coaches provide assistance in more than 60 areas of the medical center and the program has expanded to Children's Hospital of Richmond at VCU as well.

"We have learned so much about the critical role of teamwork, escalation and effective communication, as well as the importance of good process redesign and leveraging our considerable investments in information technology," said Ron Clark, M.D., chief medical officer of VCU Medical Center. "Each phase of the journey leads us to a new understanding of what is achievable and that 'zero events of preventable harm' is not just an ideal but something we can attain if we sustain our efforts."

As of 2013, the medical center has recognized more than 150 Safety Stars and will go on celebrating outstanding staff members who put safety first and prevent harm from reaching patients.

The message's reach continues to spread successfully as people from all areas of the medical center become more actively involved in safety and quality improvement work. The medical center recognized its first medical student as a Safety Star, and recipients of the award have also included pharmacy students, residents and attending physicians.

"Our journey to high reliability will never end. There will always be new opportunity to improve our existing systems and innovate new systems and processes to make the services we provide safer," Duval said. "The people of the medical center will lead the way in improving the quality and safety of medical care for our patients and the commonwealth."



Team-based care gives the sickest patients a shot at life

Complex Care Clinic



Arline Bohannon, M.D.

Did you know that the costliest 1 percent of patients consume one-fifth of all health care spending in the U.S.? And that chronic illnesses cost the commonwealth of Virginia \$26 billion a year in lost productivity and \$6 billion in treatment?

Staggering numbers to be sure, partly because complex patients don't have a single medical problem — they can have up to six or more chronic illnesses and tend to get their health care by visiting the emergency room, sometimes several times a month.

In 2011, VCU Medical Center's Virginia Coordinated Care program established the Complex Care Clinic to improve the quality of care and decrease the costs associated with the sickest patients, who often have financial, social and other barriers to accessing care.

"We've created this as a population health management initiative," said Sheryl Garland, M.H.A., vice president for health policy and community relations for VCU Medical Center. "This Complex Care Clinic is really our first venture into true management of a population. That's an example of innovation."

Complex Care Clinic staff members take a holistic approach, bringing together a team of health care professionals ranging from physicians to nurse practitioners to behavioral health specialists to pharmacists and social workers to create a circle of support around each patient. The intensely collaborative visit looks at the entire patient and takes into account the barriers to care in order to connect the patient to the right resources and services. The clinic's model, based on providing the needed expertise in a single location, engages the patient in their care and builds a relationship of trust. The gained trust becomes critical for driving the behavioral changes necessary to increase patient compliance with the treatment plan, avoid unnecessary emergency department visits, improve health and decrease costs.

"It takes a community to take care of a patient," said Marie Twiford, a case manager at the clinic. "If you don't have this team approach to figure out really what's going on beyond their medical diagnosis, you're not going to be successful."

In its first year, the Complex Care Clinic achieved a 44 percent decline in inpatient admissions, a 38 percent decrease in Emergency Department use and a 49 percent reduction in total hospital costs. This resulted in a total cost savings of \$4 million and

an average annual cost savings of \$10,769 per patient. In addition to cost reductions, improvements in outcomes were documented for patients such as those with diabetes and hypertension.

"Everyone should care about this program and the care of complex patients," said Arline Bohannon, M.D., medical director of Virginia Coordinated Care. "It decreases the cost and improves the health of a population of patients with many resource-intensive conditions."

A patient recovers her quality of life through coordinated care

In February 2013, Gwendolyn Ward's legs were twice their normal size and starting to seep fluid. She found it difficult to walk and often felt short of breath. A caregiver at a day care for 30 years, Ward could no longer play with the 3-year-olds in her classroom.

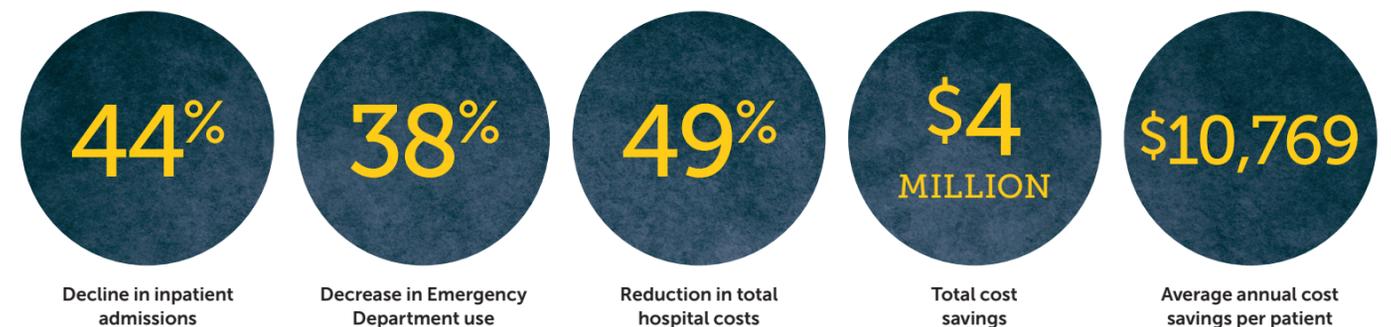
"I could not walk from my house to the bus stop," Ward, 60, said. "I couldn't walk from the bus stop to work. My sister came to pick me up from work one day and saw the difficulty I had just getting in the car. She said I had to go to the emergency room."

While at VCU Medical Center, Ward learned she had chronic kidney disease and an irregular heartbeat, as well as high blood pressure, esophageal reflux and gout. Hospital staff referred her to the Complex Care Clinic, where a team of medical professionals developed a plan of care and treated all of her conditions in one place, at one time.

"They tell me what's going on," Ward said. "You can ask questions about what they're saying and what you're seeing in your body and they will explain it to you and make it as understandable as possible. I love that."

In addition to being seen regularly at the clinic, Ward participated in a diabetes management program, adjusted her diet and started exercising. She has improved tremendously, according to Arline Bohannon, M.D.

"At first, she had to be rolled in, in a wheelchair," said Stacy Jones, a nurse practitioner in the clinic. "Now, she walks in."



Real-time technology tells doctors where they're needed now

Early Warning System

In 2012, VCU Medical Center's Office of Clinical Transformation, in concert with a group of ambitious clinicians and leaders, created a customized early warning system to quickly identify changes in critically ill patients.

Developed by Colin A. Banas, M.D., M.S.H.A., chief medical information officer, and a team of clinicians and information technology staff, the system pulls data from the patient's electronic records to alert providers to potential changes in the patient's condition. The system empowers the medical center's Rapid Response Team, a group of clinicians who are in the hospital 24/7, to effectively triage and visit the most critically ill patients before their conditions deteriorate.

"We recognized a need to give our front-line clinicians and Rapid Response Team a real-time monitoring system that continuously measures patient acuity and severity," Banas said. "The Rapid Response Team no longer waits to get the call from a nurse or doctor with a patient in distress. Instead, they are accessing the dashboard on mobile devices and arriving at the bedside to assess and intervene, sometimes ahead of the primary team and nurse."

Key features of the homegrown initiative include:

- Real-time data and rules logic constantly querying the physiological data (heart rate, temperature, blood pressure, etc.) of more than 650 hospitalized patients in a dashboard format
- Seamless integration into the existing electronic medical record
- Interactive dashboard feature for sorting and trending patient information
- Mobile access with any electronic device including laptops and tablets
- Two separate systems – one for adult patients and a similar one for pediatric patients

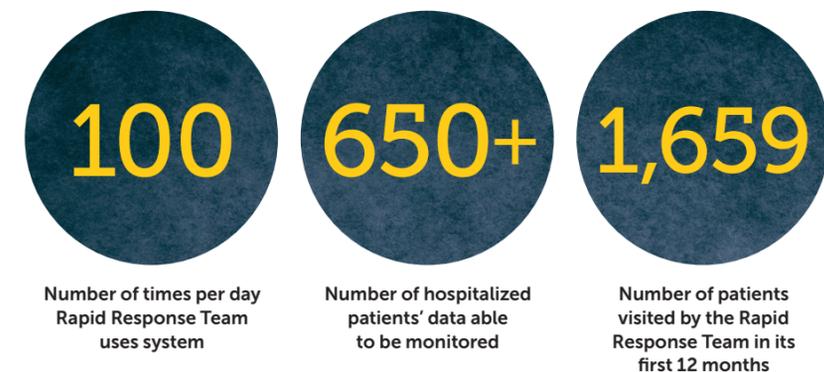
20%

Reduction in "code blues" outside ICUs



The medical center's early warning system has inspired other health systems to incorporate dashboard-type intervention, Banas said. In its first year of use, response from health care providers at VCU Medical Center has been positive. Providers access the innovative system nearly 100 times daily. The number of patients visited by the Rapid Response Team increased from 915 to 1,659 in the first year of implementing the system, and the number of patient "code blues" occurring outside of an intensive care unit has declined 20 percent. In short, sicker patients are being recognized and escalated to an appropriate level of care in a more timely manner.

"It's a godsend," Banas said of the early warning system. "It's hard to attribute any one intervention to success stories, but we had a 7 percent reduction with in-house mortality in the first year of having the tool. So I think it's a combination of people, process and technology that really helps drive this home."



Curriculum revamp revolutionizes the way medical students learn

McGlothlin Medical Education Center

Completed in spring 2013, the James W. and Frances G. McGlothlin Medical Education Center is a state-of-the-art facility for medical school teaching and learning, which uses collaborative space like no building before at VCU. The striking structure, designed by the firm of the legendary I.M. Pei, includes adjustable classroom space, a technologically advanced learning theater, unrivaled simulation labs and more. The 12-story, 200,000-square-foot facility also houses research space for VCU Massey Cancer Center.

With the opening of the McGlothlin Medical Education Center, the School of Medicine began a new chapter and unveiled its most significant curriculum overhaul in more than 30 years.

"We started the process of developing the curriculum about the same time with planning the new facility," said Jerome F. Strauss III, M.D., Ph.D., dean of the VCU School of Medicine and executive vice president for medical affairs for the VCU Health System. "This was a very fortunate coincidence because it allowed us to take components of the curriculum and map them on to a physical space and create new types of space for new types of learning."

A committee of more than 200 faculty and students participated in a multiyear planning phase for the new curriculum, which supports vastly innovative methods through team-based learning, individual problem-based learning and simulation. The revamped, dynamic curriculum also features integrated learning modules, earlier exposure to clinical experiences and multidisciplinary training using flexible learning environments, case-based lectures and small-group study.

"Focusing on facts is one thing but focusing on integration and application of knowledge is another," Strauss said. "That's what our curriculum is designed to do."

Isaac K. Wood, M.D., senior associate dean for medical education and student affairs, agreed. "The emphasis in the new curriculum is that students will be discovering knowledge. This is the best way to help students retain information, be able to critically think, be able to problem solve and get them excited about education so they want to continue."

From orientation throughout the first semester, students work in groups on assignments such as performing a successful

handoff to obtaining a patient history and physical examination to ordering tests and coming up with a successful treatment plan.

"What we're seeing is their efficiency is increasing phenomenally," Wood said. "They're learning from their errors in a very safe environment. They get into the real-live patient arena. They will have gone through this so many times, it's going to be like second nature for them to think through the process."

Divided into four phases, the M.D. program begins with The Scientific Foundations of Medicine, emphasizing foundational knowledge required to be able to understand the structure, function and pathophysiology of the different organ systems. The second phase, The Applied Medical Sciences, is a multidisciplinary integrated curriculum in which students learn the normal structure and function of each organ system integrated with the pathophysiology of disease and treatment strategies. The third phase, Clinical Concentrations, sees students rotate through the various clerkships of family medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, psychiatry, and surgery. The final phase, Advanced Clinical Concentrations, includes several required experiences and electives at VCU Medical Center and its affiliated sites and at approved medical schools elsewhere in the nation and abroad.

VCU medical students now experience the merger of the clinical aspects of the curriculum with the basic sciences on day one of their education as future health care providers.

"The new curriculum forces us to be more active in our education," said first-year medical student Samay Sappal. "Everything we learn seems to connect so well in this system and it honestly makes learning a lot easier and a lot more enjoyable."

200,000

Square feet dedicated to research and learning



Faculty and students in the McGlothlin Medical Education Center lobby



McGlothlin Medical Education Center

State-of-the-art simulation center emphasizes patient-centered care

Ellen Brock, M.D., associate professor of obstetrics and gynecology in the VCU School of Medicine, became director of the Center for Human Simulation and Patient Safety in 2008. Fast-forward five years. In spring 2013, the center moved to its new home in the McGlothlin Medical Education Center, with seven staff members and 25,000 square feet of state-of-the-art simulation spaces over two floors.

"The center, at its core, was designed to bring all of the individual programs and departments and their simulation projects together for the betterment of the entire institution," said Mary Alice O'Donnell, Ph.D., associate dean and director of graduate medical education.

"As skill deficiencies and opportunities are identified, simulation approaches are developed to address them," said David P. Chelmow, M.D., professor and chair of the Department of Obstetrics and Gynecology. "Successful approaches become integrated into the regular curriculum."

An example of the collaborative partnerships the center has formed to support improved training and patient care includes its work with the graduate medical education "Walk the Walk" simulation experience for 140 first-year residents each year. This

orientation is designed to assess and reinforce key skills that all residents are expected to perform, regardless of specialty, as they begin their internship.

"As the practice and education of health professionals has entered a new era defined by competency and quality, simulation-based training has become a dominant modality for education," said Alan Dow, M.D., M.S.H.A., assistant vice president of VCU Health Sciences and director of the Center for Interprofessional Education and Collaborative Care. "Dr. Brock and her team have led or supported VCU's efforts to be on the vanguard of these efforts."



VCU Center for Human Simulation and Patient Safety

Faculty and students on curriculum committee

2004



Number of phases in new curriculum

Medical students working in teams on a patient diagnosis

Hands-on learning anchors new curriculum

Jonathan Sorah began his journey as a first-year medical student in the VCU School of Medicine with a weeklong boot camp that focused on how to conduct basic physical exams. The camp included working with standardized patients — trained actors from the VCU School of the Arts — who serve as practice patients.

The hands-on start to his medical education was initially intimidating, Sorah said, but served as a great foundation for the breadth of early clinical practice in the school's new curriculum, which launched in conjunction with the opening of the McGlothlin Medical Education Center in 2013.

"The new curriculum is revolutionary in a lot of ways," said Sorah, who is in the first class to use the new curriculum and the new building. "It seems the goal is to get us out of the classroom and into clinics earlier. Instead of two years of classes, then two years of clinicals, classes are 18 months so that we can spend two and a half years in clinicals.

"That was a big draw for me, because you don't become a good physician by learning from a book or slideshow, but by doing hands-on activities in a clinical setting."

Sorah said it is helpful that the M.D. program's multidisciplinary curriculum uses an integrated

approach and team-based learning, because it more closely emulates the environment he'll work in as a future physician.

"The biggest way the new curriculum will help me is the early clinical exposure and really getting us comfortable with talking to patients and asking good questions," he said. "I've learned that the best way for us to make any diagnosis is just talking to the patient. The fact that we're doing that earlier and earlier will only make it more natural for us going forward."

"Focusing on facts is one thing but focusing on integration and application of knowledge is another. That's what our curriculum is designed to do."

— Jerome F. Strauss III, M.D., Ph.D.

Right care, right time, right place

RAM Care

Imagine waiting for the results of a bone marrow biopsy to find out whether or not you have leukemia. When the anxiety and fear associated with not knowing fill your days, every second counts.

Such a scenario spurred pathologists and oncologists involved in the Reliable, Appropriate and Measurable (RAM) Care program at VCU Medical Center to take a critical look at their methods. They wanted to determine how improving the care process from biopsy to results could decrease the wait time. By using research-based best-practice models, RAM Care was able to reduce the time between biopsy and results by 1.4 days, meaning 120,960 fewer seconds of worrying.

Led by physicians, RAM Care uses data and research to increase quality by decreasing unwanted variation in care. The program ensures patients receive the right care at the right time in the right place. Through RAM Care, VCU Medical Center combines the value of individualized care with the benefits of evidence-based best practices.

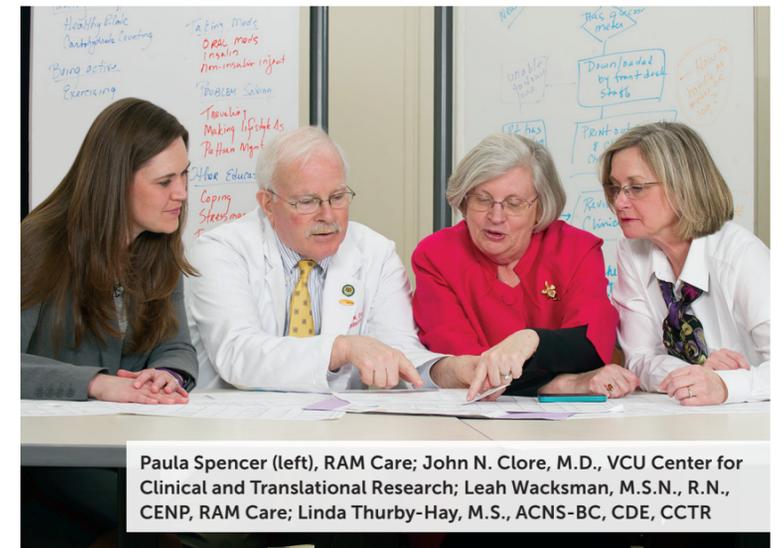
"As a leading academic research institution, we have an obligation to our patients to practice to the highest standards, which is what best practice is all about," said Ron Clark, M.D., chief medical officer of VCU Medical Center.

RAM Care provides a formal structure to support the collaboration of physicians and caregivers to create best practices for VCU Medical Center and its patients. By looking at the current care processes and defining care delivery goals, the medical center can establish appropriate measures for consistency in staff training, measuring compliance and patient outcomes. Reducing the care variation helps reduce the medical waste associated with unnecessary or duplicative services. This collaboration also supports the medical center's efforts to further reduce its already impressively low rate of health care-associated infections. In fact, by using best practices and other preventive strategies, VCU Medical Center has achieved an 86 percent reduction in health care-associated infections since 2003.

"RAM Care takes a critical look at care and challenges the teams to think outside the box to determine if we are using the best methods for providing care to our patients," said Leah Wacksman, M.S.N., R.N., CENP, director of RAM Care.

Developing these standards is similar to having a multidisciplinary consultation on every patient, without the additional time and cost. However, reducing variation does not preclude individualized care, and VCU Medical Center physicians are committed to meeting the unique needs of each patient.

"This isn't cookbook medicine," Clark said. "Essentially, it is a map to guide you to the best possible outcome, but it can only get you there if everything goes smoothly. We understand that medicine has to be personalized to the patient condition, sometimes requiring detours from the main road."



Paula Spencer (left), RAM Care; John N. Clore, M.D., VCU Center for Clinical and Translational Research; Leah Wacksman, M.S.N., R.N., CENP, RAM Care; Linda Thurby-Hay, M.S., ACNS-BC, CDE, CCTR

In its first year, RAM Care reported impressive results demonstrating increased quality of care as well as decreased readmissions, retests, errors and costs. The program reduced the need for post-op cervical collar replacements by including collar fitting in the pre-op

process, allowing for faster discharge as well as giving patients the opportunity to experience wearing the collar before waking up in it after surgery. The change is estimated to reduce collar waste by 30 percent, resulting in supply cost savings as well.

The program also instituted a best practice requiring all outpatient clinics to upload EKG tracings directly into the electronic medical record. This practice resulted in a 93 percent increase in real-time access to the latest results, allowing improved clinical decision-making for all caregivers.



Team-driven training puts practitioners on the same page

Interprofessional Education

Charlie Archambault/Charlie Archambault Photography

While recovering from recent surgery, the man lying in the hospital bed took a sudden turn for the worse. His vitals were crashing and he began coding. His health care team sprang into action. A team leader assessed the situation, accessed the patient's chart and read aloud background information. She began to advise her team — another physician and three nurses — what needed to happen next.

They mobilized and swiftly followed her lead, calling out medication doses and what they were doing as they were doing it. The efforts paid off, as the man — actually, a fully wireless, portable patient simulator that closely mimics the anatomical workings of the human body — started to stabilize.

The teammates, fourth-year students from the VCU schools of Medicine and Nursing, had just wrapped the fourth scenario in a series of eight simulator-driven situations that were part of an interprofessional education course, a new addition now being included in the curriculum of VCU's health sciences schools.

After each scenario, the team had an opportunity to discuss their actions with each other and a faculty member who observed their interactions. With each subsequent scenario, there was marked improvement in communication and greater structure to how they performed their tasks and care for the patient.

VCU is among the leaders in interprofessional education, a growing trend used in the training of future generations of health care professionals. With little or limited opportunities to work together while still in school, many of these students would only have their first interaction with other health care disciplines on the first day on the job — with real patients.

Interprofessional education is designed to get multiple health care professions working as a team and communicating effectively. Many people may not realize that it takes the expertise of many different disciplines — physicians, nurses, pharmacists, therapists, technicians and more — to come together and care for a single patient. Each one of these experts needs to be on the same page and in agreement.



Number of VCU schools working to create interprofessional experiences



Number of students who participate in interprofessional experiences each year

"Traditionally, with health care education, we've trained individual disciplines separately and expected them to come together as a team once they are taking care of patients," said Alan Dow, M.D., M.S.H.A., assistant vice president of VCU Health Sciences and director of the Center for Interprofessional Education and Collaborative Care. "What we are trying to do is take the idea of working together as a team and bring it back into the classroom, into the safe areas like simulation where we can teach people how to work together as a team."



Alan Dow, M.D., M.S.H.A., Center for Interprofessional Education and Collaborative Care

Dow, a 2011 Macy Faculty Scholar, leads a research project through support from the Josiah Macy Jr. Foundation to examine how increased collaboration among health professionals can improve patient care and how to teach team-based competencies that foster effective interprofessional practice. His team, including more than 20 faculty members from six of VCU's schools, is in the process of creating a sequence of interprofessional experiences that other institutions can use.

"At VCU, we've done small forms of interprofessional education projects for many years, but this is the first time we've really committed as a campus to doing large-scale interprofessional education where we're bringing together whole classes of learners to do various activities such as patient simulation or managing virtual patients," Dow said. "We want to train collaborative practitioners who can improve health and beneficially impact our communities."

New leader takes health care to a higher level

Chief Safety and Quality Officer



Gene N. Peterson, M.D., Ph.D.

On Oct. 2, 2013, Gene N. Peterson, M.D., Ph.D., became VCU Medical Center's first chief safety and quality officer and the VCU School of Medicine's associate dean for patient safety and quality care. As an integral part of the leadership team, he is charged with taking the medical center to new levels of safety, quality, graduate medical education and curriculum design that crosses all clinical disciplines. A practicing anesthesiologist, he also serves as an attending physician on the anesthesia team.

"We are excited to take this next step in advancing quality and patient safety at VCU Medical Center," said John F. Duval, CEO of MCV Hospitals. "Dr. Peterson will play an indispensable role in ensuring that our clinical and learning environments not only deliver safe and high-quality care, but also provide students from all medical disciplines with the required learning to ensure we graduate the next generation of experts in patient safety and quality improvement."

Peterson, who previously served as associate medical director and co-director of the Center for Clinical Excellence at the University of Washington Medical Center, said part of what attracted him to his new position was the commitment of the VCU Medical Center leadership team to become the safest health care system in the nation.

"The focus on quality and safety is so well-articulated here," he said. "It is a privilege to join this organization."

As someone who collaborated on the World Health Organization surgical safety checklist with E. Patchen Dellinger, M.D., for 10 years, Peterson values standardized communication and safety checklists. His to-do items include three goals he hopes to implement within the next two years. The first empowers all members of the organization to speak up if they see something wrong or sense a potential problem.

"If you see something, say something," Peterson said.

The second revolves around the standardization of transitions of care, or patient handoffs. Every day at the medical center, hundreds of handoffs occur between shifts. Peterson wants to ensure that faculty and residents have the necessary tools and skills to perform the process well.

"We will not only make this the safest place for patients, staff and visitors, we will set the quality and safety standard for the commonwealth of Virginia and the nation."

— Gene N. Peterson, M.D., Ph.D.

The final goal refers to STAR Service, in which all VCU Medical Center staff and residents take part. STAR Service isn't a program but rather a culture founded on "Safety First, Every Day" and supported by the medical center's commitment to provide patients, visitors and fellow team members with superior service.

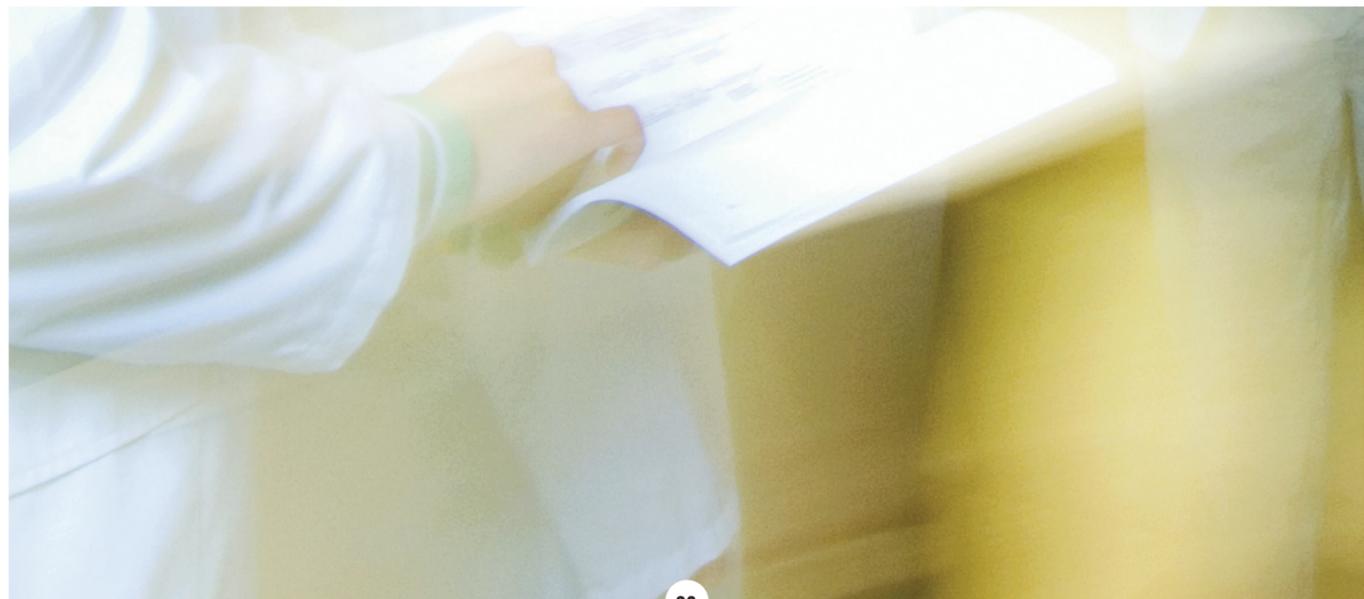
"We're all going to improve how to communicate with patients so we can do it clearly, safely and consistently," Peterson said. "Our goal is that all learners who leave VCU have all three sets of skills."

He added, "I find VCU an exciting place to be at this point in my career. The infrastructure at VCU Medical Center exists to propel us to become the safest health system in the nation. Starting each morning with the safety call, following behavior-based safety habits to prevent errors, working with our committed Magnet nurses, outstanding staff, our faculty, residents and all of our students in our professional schools, we will not only make this the safest place for patients, visitors and staff, we will set the quality and safety standard for the commonwealth of Virginia and the nation."



Headlines

The past year was filled with some noteworthy accomplishments for VCU Medical Center as a whole, as well as for deserving individuals within our organization. We also welcomed some exciting new faces and bid a fond farewell to a few stalwarts.



David X. Cifu, M.D., (center)
Department of Physical
Medicine and Rehabilitation

\$62 million TBI study

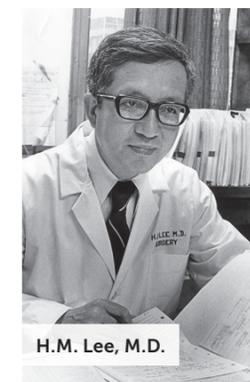
VCU celebrated its biggest day in research history, receiving a \$62 million federal grant — its largest federal award to date — to oversee a national research consortium of universities, hospitals and clinics that will study what happens to service members and veterans who suffer mild traumatic brain injuries or concussions. The White House announced the award in August 2013, describing it as a key feature of the Obama administration's National Research Action Plan to help military personnel and their families.

Led by David X. Cifu, M.D., the Herman Jacob Flax, M.D. Professor and chair of the Department of Physical Medicine and Rehabilitation and executive director of the Center for Rehabilitation Science and Engineering, researchers will study concussions caused by combat and civilian injuries. The five-year study will try to determine who is more likely to have problems after these injuries, how the injured can be better treated and what the injured and their families can expect over a lifetime.

This is the second significant grant that VCU has received in recent years. In 2010, VCU received a \$20 million CTSA grant from the NIH, becoming the only academic medical center in Virginia to join a nationwide consortium of research institutions working to turn laboratory discoveries into treatments for patients.

Loss of a transplant pioneer

H.M. Lee, M.D., internationally renowned pioneer in organ transplantation and former professor and chairman in the Division of Vascular and Transplant Surgery at the Medical College of Virginia, which became VCU School of Medicine, died March 24, 2013, at the age of 87. VCU Hume-Lee Transplant Center, which Lee led for 20 years and was named for him and his mentor, David Hume, M.D., is the oldest transplant unit in the U.S.



H.M. Lee, M.D.

Heartfelt gift

The Pauley Family Foundation gave \$5 million in February 2013 to VCU Pauley Heart Center that will be matched by the VCU Glasgow Endowment, creating a \$10 million total gift to expand and enhance recruitment and research at the world-class cardiology program.

"This is a project that is near and dear to my heart," Stanley F. Pauley said. The philanthropic connection between Pauley and the heart center began in 2006, when the former heart center patient, impressed by the staff and treatment he received, directed his family foundation to make a \$5 million gift to VCU for its heart center, which was later renamed VCU Pauley Heart Center.



Stanley F. and Dorothy
A. Pauley, Pauley Family
Foundation

"VCU's progress as one of the nation's top 50 public research universities has been accelerated by a series of game-changers, and the Pauley Family Foundation's latest generous gift is another example," said Michael Rao, Ph.D., president of VCU and the VCU Health System. "Their continued support empowers my colleagues at VCU Pauley Heart Center to save lives and improve the human experience throughout Virginia and beyond."

VCU announced a fundraising campaign to raise an additional \$5 million for the heart center that also will be matched dollar-for-dollar by the Glasgow Endowment.

"These gifts to VCU Pauley Heart Center, supported by the Glasgow Endowment match, will have a long-lasting impact," said Sheldon M. Retchin, M.D., M.S.P.H., CEO of VCU Health System and senior vice president for VCU Health Sciences. "The Pauley family contributions will be felt for generations to come."

Best hospital

VCU Medical Center was ranked a Best Hospital in Virginia for the second consecutive year by U.S. News & World Report. The medical center also saw two specialty areas rank in the top 50, nephrology at 41 and orthopaedics in the No. 39 spot. In addition, the magazine recognized eight specialty areas as high performing: cancer; cardiology and heart surgery; diabetes and endocrinology; gastroenterology and GI surgery; geriatrics; neurology and neurosurgery; pulmonology; and urology.

The magazine also ranked the Children's Hospital of Richmond at VCU among the best children's hospitals for 2013-14 and 50th in nephrology.



Labor and Delivery Unit

New addition

In August 2013, VCU Medical Center opened its renovated Labor and Delivery Unit, which offers unique accommodations and childbirth options to expectant mothers.

The new unit features spacious rooms with private labor tubs and showers, a 24-hour visitation policy for family and friends, à la carte room service, and wireless fetal monitoring, allowing women to move freely during labor. The unit will support VCU Medical Center's comprehensive labor and delivery team, including obstetricians, maternal-fetal medicine specialists, certified nurse-midwives and nurses.

Level 1 pediatric care

Children's Hospital of Richmond at VCU earned a designation as Virginia's first Level 1 pediatric trauma center from the American College of Surgeons in July 2013. The hospital joins 39 other such



centers across the country that demonstrate the highest level of patient care, education and research.

"This designation is confirmation of the superior care Children's Hospital of Richmond at VCU provides for children and their families every day," said Sheldon M. Retchin, M.D., M.S.P.H. "This level of outstanding care for children can only be accomplished with an experienced and multidisciplinary team of physicians, nurses and specialists working together to maximize positive outcomes for our youngest patients."

Expanded cancer care

VCU Massey Cancer Center expanded its reach to South Hill, Va., and Spotsylvania, Va., with the opening of two new radiation therapy centers.

On Aug. 14, community citizens, health care leaders, local politicians and officials gathered at Community Memorial Healthcenter (CMH) for the grand opening of the Solari Radiation Therapy Center, the first and only radiation therapy center in the Southern Virginia area. The center is a joint venture between CMH and Massey.

A week later, HCA Spotsylvania Regional Medical Center opened a state-of-the-art radiation oncology unit, offering services jointly delivered by VCU Medical Center and Massey. The center encompasses 7,000 square feet and features a Varian TrueBeam high-energy linear accelerator and 4-D General Electric Optima Simulator that offer innovative radiation treatments.

Shining beacons

VCU Medical Center's Hume-Lee Transplant Center, Medical Psychiatry Unit and Acute Care Surgery Unit and VCU Massey Cancer Center's Bone Marrow Transplant Unit (BMT) each received in 2013 a Beacon Award for Excellence from the American Association of Critical-Care Nurses. The award recognizes those units that demonstrate strong patient outcomes and exemplify outstanding service and innovation. The Medical Psychiatry and BMT units are the first of their kind in the nation to earn the honor.



Notables

1 **Tod Brindle**, certified wound ostomy continence nurse at VCU Medical Center, was one of five nurses nationwide to be named the American Nurses Credentialing Center's 2013 National Magnet Nurse of the Year. Brindle, whose research has changed clinical practices both at VCU and at more than 1,100 hospitals in the U.S. and 10 other countries, was honored for his contributions of transformative ways to improve patient care.

2 **Candace Burton, Ph.D.**, assistant professor in the VCU School of Nursing, was one of 12 nursing educators from across the U.S. to win a highly competitive three-year, \$350,000 grant from the Robert Wood Johnson Foundation Nurse Faculty Scholars program. Burton plans use the grant to support her research that combines epigenetic science with her passion for reducing the effects of intimate partner violence. Her study will be the first of its kind to examine how acute stress from teen dating violence can alter an individual's genome leading to chronic illnesses later in life.

3 **Patrick Coyne, R.N., M.S.N.**, clinical director at VCU Massey Cancer Center's Thomas Palliative Care Unit, was voted one of the top 30 visionaries in hospice and palliative medicine in a poll conducted by the American Academy of Hospice and Palliative Medicine. Coyne was instrumental in the 1994 initiation of VCU's palliative care service unit, which was one of the first of its kind in the nation.

4 **John F. Duval**, CEO of MCV Hospitals, was elected in September 2013 as chair-elect of the Accreditation Council for Graduate Medical Education's board of directors. He will hold this position until September 2014, when he will then serve as chair for two years. ACGME is a private, nonprofit

council that evaluates and accredits residency programs in the U.S. and internationally.

5 **Jean Giddens, Ph.D., R.N., FAAN**, a nationally recognized expert in nursing education, curricula and evaluation, joined the School of Nursing as its new dean in June 2013. Giddens previously served as professor and executive dean of the College of Nursing at the University of New Mexico. The author of numerous journal articles, nursing textbooks and electronic media in nursing education, she is widely recognized for creating innovative teaching and learning models in nursing sciences.

6 **Sheldon M. Retchin, M.D., M.S.P.H.**, CEO of VCU Health System and senior vice president of VCU Health Sciences, received the 2013 Distinguished Service Award from the Virginia Hospital and Healthcare Association. The award honors his exceptional leadership and significant contributions to hospitals, health systems and health care. Retchin, a national expert in health policy with special expertise on the Medicare program, has testified before Congress on the role of the safety net in health services delivery.

7-8 **Deborah T. Zimmermann, D.N.P.**, chief nursing officer and vice president of patient care services at VCU Medical Center, was elected chair of the American Nurses Credentialing Center's Commission on Magnet Recognition program. Zimmermann and **Leigh Small, Ph.D., R.N., CPNP-PC, FNAP, FAANP, FAAN**, associate professor and chair of the School of Nursing's Department of Family and Community Health Nursing, were also named fellows of the American Academy of Nursing.

By the Numbers

Take a look at some of the financial information, facts and figures that sum up 2013 for VCU Medical Center.

S&P rating:

AA-
Outlook: Stable

Moody's rating:

Aa3
Outlook: Stable

VCU Health System financial statement*

Total operating revenue	\$2,058,392	Supplies, purchased services and other expenses	\$444,358
Nonoperating revenues and expenses	\$32,780	Depreciation and amortization	\$62,060
Salaries, wages and benefits	\$794,108	Medical claims expense	\$569,098

(in thousands for fiscal year ending June 30)

* includes VCU Health System components: MCV Hospitals, MCV Physicians, Virginia Premier Health Plan, Children's Hospital of Richmond at VCU, University Health Services and UHS Professional Education Programs

Total operating revenue

2013	\$2,058,392
2012	\$1,794,802
2011	\$1,728,733
2010	\$1,745,067
2009	\$1,581,622

(in thousands for fiscal years ending June 30)

Virginia Premier Health Plan member months

2013	2,050,883
2012	1,766,702
2011	1,811,898
2010	1,748,124
2009	1,610,815

Sponsored research awards

2013	\$141 million
2012	\$132 million
2011	\$147 million
2010	\$150.9 million
2009	\$134.4 million

Adjusted discharges

2013	58,091
2012	56,116
2011	55,698
2010	55,616
2009	54,285

Total surgeries

2013	20,442
2012	20,506
2011	20,114
2010	19,727
2009	18,798

Student enrollment*

	2013	2012	2011	2010	2009
Allied Health Professions	1,023	1,044	1,060	1,100	1,096
Dentistry	490	505	516	509	489
Medicine	1,292	1,294	1,276	1,290	1,318
Nursing	909	866	954	975	968
Pharmacy	605	611	608	609	603

* includes on-campus and off-campus enrollments



VCU

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