



JAMS UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES • SPRING 2012

JOURNAL

Leading the Way

QUALITY HEALTH CARE
in the Midst of Change

MESSAGE

from the Chancellor

Welcome to this issue of the *UAMS Journal*!

We are in a time of upheaval and change in our nation's health system. The changes are being driven by advances in science, communications technology, cost and demographic shifts in the population of our nation as we become more diverse and as baby boomers age.

Despite the controversy surrounding federal health reform legislation known as the Patient Protection



and Accountable Care Act, the trends driving this change are in many ways independent of the fate of that legislation. This edition of the *UAMS Journal* is devoted to a few examples of the ways in which UAMS is providing leadership toward better societal health in the midst of this change process.

Our efforts include providing leadership toward a health system that is more patient and family centered. Personalized genomic medicine is becoming a focus of our research and patient care. We are developing strategies to address the health disparities that have developed over time between various regions of the state and between those who have less access because of social determinants such as poverty, education level, race, ethnicity and living conditions.

You will read about how we are engaging with community partners to improve the health of various populations, and what our College of Public Health and the Arkansas Department of Health are doing to jointly bring about changes to improve the health of Arkansans.

With inter-professional teamwork, we have the tools to make progress in bringing about the change our health system needs, both nationally and here at home.

So enjoy our story!

A handwritten signature in black ink that reads "Dan Rahn".

Dan Rahn, M.D.
Chancellor, University of Arkansas for Medical Sciences

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The *UAMS Journal* reaches all corners of the world ... including the South Pole! Erin Heard, son of UAMS' Jeanne Heard, M.D., Ph.D., is a civil engineer with the National Science Foundation's Office of Polar Programs. He works in Antarctica building and maintaining the towers and the communication and renewable energy equipment for the scientific expeditions. He is shown here with the *UAMS Journal* at Mount Newall with the Trans-Antarctic Mountain range in the background and at the geographic South Pole.



TARGETING

Health System Reform

OUR NATION'S HEALTH SYSTEM is widely recognized to be the best in the world for treating complex, acute illnesses. As a nation, we are also known to lag many economically developed nations in meeting overall population health needs.

The same is true in Arkansas. Our system mirrors the national problems, but is also compli-

cated by our rural nature, large numbers of underserved patients, and the number of people with a lower socio-economic and educational status. We are near the bottom of the nation in many health categories, including the number of children living in poverty and infant mortality.

Within Arkansas, health outcomes vary widely by region and demographic segments. Factors such

as rural versus urban or suburban residence impact access to health care. Insurance status, economic status, educational level, ethnicity, personal habits (obesity, tobacco use and exercise) – all affect health outcomes.

The triple aim of efforts to reform our nation's health system is to raise quality and safety throughout the system, improve the patient's experience by becoming more patient and family centered, and improve efficiency and reduce cost. The goals, quite simply, are better health, better health care and lower cost.

With the mapping of the human genome about six years ago, we entered a biomedical era with great promise to understanding the molecular mechanism underlying our most important chronic diseases. Many different molecular pathways can lead to cancers, cardiovascular disease, psychiatric illnesses and other diseases.

The term of art we use to describe this field is "personalized medicine." We at UAMS have been developing the infrastructure for the kind of team science necessary to unravel the mechanisms of disease and to translate findings into actual improvements in our approaches to health and disease.

As we are making advances on the scientific front, we also are wrestling with the fact that the burden of illness is not distributed evenly throughout society. Some populations experience higher infant mortality, shorter life expectancy and worse outcomes from chronic diseases than others. These disparities are intertwined with social issues, such as geography, health insurance, education, economic status and ethnicity.

The complexity and interconnectedness of these issues demand that the medical, social and educational sectors work collaboratively to make measurable progress without sacrificing those aspects of our system that make it great.

Enabled by communication technology and partnerships with the Arkansas Department of Health, other state agencies and community leaders, UAMS is developing the strategies to do just this.

We have embraced the foundation of a reformed system, which is comprehensive patient-centered medical homes staffed with teams that can engage patients and families in preventive services, promote and reward healthy behaviors, and support the management of chronic diseases, while bringing newer personalized, precise, molecular diagnostics and therapeutics to the care of patients rapidly and effectively.

UAMS is working on a health information backbone that supports best practice, provides up-to-date clinical information and enables clinicians and patients to be notified when preventive services are due, such as monitoring blood pressures, checking blood glucose and getting vaccinations. We are using distance technology to connect patients and primary care practices to specialist services when needed.

There's much more work to be done. We as a society need to continue addressing issues of improving the health system to achieve better health outcomes, while changing the structure of payment. We must give our health professionals the tools needed to be successful for all of our sakes. ❖

--Dan Rahn, M.D.

Our system mirrors the national problems, but is also complicated by our rural nature, large numbers of underserved patients, and the number of people with a lower socio-economic and educational status.

→ Going Public

Public health efforts are improving Arkansans' lives **By Nate Hinkel**

THROUGHOUT HISTORY the role of public health in the overall health care model has been one of great discovery, evolution and varying degrees of emphasis.

In Arkansas, which faces the challenges of great disparity and rural populations, it's clear that an approach integrating public health efforts and the overall health care system is the ticket to better serving the state's unique needs.

"What's happening now, and increasingly has been for a couple decades now, is that state leadership and those molding health institutions like UAMS are all on the same page as far as the realization of how crucial it is to take responsibility of the health of Arkansans," said Jim Raczynski, Ph.D., dean of the UAMS Fay W. Boozman College of Public Health. "Those in the health professions see the importance of not only treating people who come to them with diseases, but also figuring out ways to prevent problems, diseases and poor health."

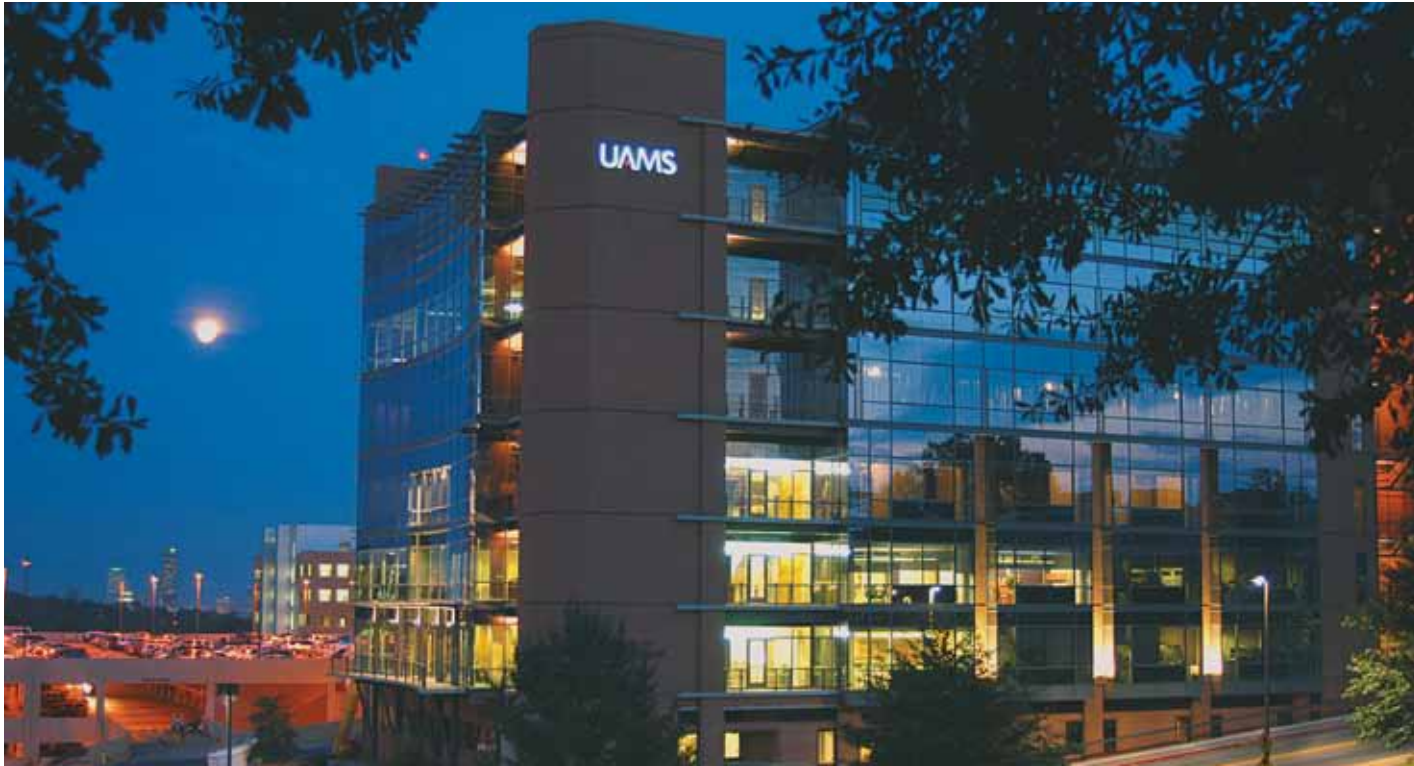
Last year, the College of Public Health celebrated a decade of researching the needs of Arkansans while working toward enacting initiatives and crafting policies to meet them. The college began in July 2001, but it was forward-thinking leadership several years before that set it in motion after Arkansas was awarded more than \$50 million a year in a national legal settlement with the tobacco industry. In 2000 the people of Arkansas voted to become the only state to dedicate all of its settlement money to improve the health of its residents, 5 percent of which went to establish the College of Public Health.

"That was a landmark effort that really paved the way for enhancing public health in our state," said UAMS Chancellor Dan Rahn, M.D. "You really can't say enough about the leadership it took to direct all of the state's tobacco settlement money and put it toward this vision that was at the time on the leading edge of innovation nationally. With the creation of this new public health hub at UAMS, it opened the gates for collaborations and a more streamlined approach with what the Arkansas Department of Health and other entities and institutions were doing for the betterment of the state." »

**"Every day
Arkansas is
making strides
to be a healthier
place to live."**







The UAMS College of Public Health building opened in 2004.

Finding Its Place

And while the role of public health in Arkansas is currently flourishing within its overall health care model, that was not always the case.

Raczynski said at the roots of public health were physicians looking into the causes of diseases, where the field of epidemiology developed. Even before the 18th century, the fields of medicine and public health were closely aligned, and still are in most countries throughout the world. But Americans tended to separate the two in the early 20th century. The major cause of disease in those times was infectious diseases rooted largely in unsanitary conditions and unsafe water and food supplies.

“A lot of the people involved in those issues were scientists or human rights activists or social workers,” Raczynski said. “Hookworm disease, malaria and yellow fever were a huge problem in Arkansas and throughout the South.”

In the early 20th century, medicine became focused on viruses and bacteria. The Flexner Report, roundly known as the landmark directive for medical education and care in the United

States and Canada, generally recommended for medicine to continue going its separate direction while leaving the cleanup of unsanitary conditions to social advocates, which became known as public health.

“And so public health has sort of grown up as a secondary field,” Raczynski said. “The renaissance that we’re enjoying now with public health reemerging as part of the overall picture has not always been that way.”

Defining Efforts

Raczynski’s idea of public health is more in line with helping create policies to improve health and using evidence from research to change the behavior of people, which the College of Public Health has done successfully.

A recent flagship effort, Raczynski said, is a study done at UAMS that showed that a Community Connector Program developed and implemented by Tri-County Rural Health Network to enhance access to home and community-based health care services to the disabled and elderly can save millions in the Arkansas

Medicaid program. The study's key finding shows that the state's Medicaid system had a net savings of more than \$2.6 million over three years when Medicaid-eligible elderly and disabled adults with unmet long-term care needs in a three-county area were sought out and connected to home and community-based long-term care services.

"The intervention resulted in a more than 23 percent reduction in annual Medicaid spending per participant, demonstrating a savings of \$3 for every \$1 invested," Raczynski said. "The bigger picture is that it proves that getting out into communities with these health workers and connecting with Arkansans makes sense medically and financially. That's where I feel we can make the difference, in projects like this."

Paul Halverson, Dr.P.H., Health Department director, believes the department's aim is to control epidemics, ensure safe food and water, and improve maternal and child health services, among many other public health activities looking to improve the quality of life of Arkansans. Those bellwether successes include influenza immunization programs and hometown health initiatives at the community level.

"Many of our services are provided at the local level through a statewide service network. Our public health workforce is working every day to promote prevention services and to defend against threats to the public's health," Halverson said. "Our strategic objectives include decreasing infant mortality, reducing hypertension, increasing physical activity and reducing disparities."

On the Same Page

Many of the successful public health initiatives in the state are the result of the Health Department and UAMS joining forces along with other state institutions and organizations.

The College of Public Health and Health Department are intertwined in many ways. Halverson himself is a full-time UAMS faculty member, with several other Health Department employees having appointments to teach at UAMS. The two

entities share many research projects.

A number of Health Department employees from various disciplines are enrolled in the College of Public Health for advanced training. Since 2004, more than thirty have completed a Master of Public Health or a Post-Baccalaureate Certificate in Public Health. Before the college was established, Health Department personnel pursuing advanced training had to go out of state, with many receiving degrees from Tulane University's School of Public Health and Tropical Medicine.

The relationship with the UAMS College of Public Health has provided Health Department employees a rigorous program while allowing them to work full time and balance other responsibilities. Their enhanced knowledge and abilities have benefited all Arkansans.

UAMS is also committed to using state-of-the-art technologies, Rahn said, to provide rural communities with its nationally recognized ANGELS (Antenatal and Neonatal Guidelines, Education and Learning System) program. This program uses communications technology to provide long-distance care to rural Arkansas women and their newborns. UAMS also leads the Arkansas SAVES (Stroke Assistance Through Virtual Emergency Support) program, which links rural hospitals 24 hours a day to stroke specialists.

"Every day Arkansas is making strides to be a healthier place to live," Rahn said. "I see it as essential that public health continues to be a cohesive force in transforming the way we look at health care in the state."

Halverson agrees it'll take an integrative effort moving forward.

"At the end of the day we want to bring public health and medicine back together," Halverson said. "Now more than any time in our history we're seamlessly integrating medicine and public health in innovative ways to keep Arkansans healthy." ❖

"Many of our services are provided at the local level through a statewide service network. Our public health workforce is working every day to promote prevention services and to defend against threats to the public's health."

➔ Taking the Initiative

Health care workforce group
tasked with revolutionizing
care in Arkansas

By Nate Hinkel

ARKANSAS GOV. MIKE BEEBE had a clear directive for the state's health care leaders: Develop a strategic plan to ensure the state's medical workforce is ready, willing and able to handle the overall growing needs of Arkansans in the most efficient, state-of-the-art and effective way possible.

The answer was found in the creation of the Arkansas Health Workforce Initiative. Project leaders began dissecting an expanse of statistics and reports, holding public forums, and seeking input from countless state agencies and institutions. The result was delivery of the most comprehensive strategy for health care reform in the state's history.

The workforce initiative was led by co-chairs UAMS Chancellor Dan Rahn, M.D., and Arkansas Department of Health Director Paul Halverson, Dr.P.H., with principal support being provided by Arkansas Surgeon General Joe Thompson, M.D., and the Arkansas Center for Health Improvement. Their work has laid the foundation for the future of health care in Arkansas with the completion of the Arkansas Health Workforce Strategic Plan, which can be found at <http://ua.ms/workforceroadmap>.

The workforce initiative is one component of a four-pronged strategy directed by Beebe to reform the state's health system, which includes efforts for insurance, information technology and payment reform.

"We have many Arkansans who don't have the ability to get access to a provider, who don't



get a referral in a timely way and aren't getting the preventive care to keep them healthy," Thompson said. "What this group initially struggled with was, 'How are we going to get people the care they need, the preventive services to keep them healthy, the sick care services when they need them in greatest time of need, and how do we put it all together to wrap a team around a patient to keep them well?'"

The Challenges

Shortages and misdistribution of physicians and other health care professionals is a national

"The existing health workforce is inadequate to meet the health needs of Arkansans by almost every measure."



trend. In Arkansas, given its higher rate of disease and rural communities, the problem is even more ominous.

More than 500,000 Arkansans live in areas designated by the Health Resources and Services Administration (HRSA) as having shortages of primary medical care, dental or mental health providers. More than half of the 75 counties in Arkansas are identified with a primary care deficiency.

In 2011, with its high prevalence of chronic disease and unhealthy behaviors, Arkansas was ranked one of the unhealthiest states in

the country.

“Smoking, obesity, diabetes, immunization coverage, prenatal care, and the list goes on and on where the state’s health burden is a staggering challenge,” Rahn said. “Arkansans living in areas with a shortage of health providers have severe problems in accessing care that can address their most basic health needs. We found that the existing health workforce is challenged to meet the health needs of Arkansans by almost every measure.”

The initiative noted an abundant effort across the state to tackle these demands, ranging from »

telemedicine programs to increasing medical school graduates to new education programs, but a shortage of health workers remains a challenge.

In addition, Arkansas has one of the oldest populations in the country, a limited pipeline to train new providers and an extremely low health literacy rate, which will overwhelm the already strained system unless a strategic plan is quickly identified and adopted.

Perhaps the most daunting challenge ahead is pursuant to the federal Patient Protection and Affordable Care Act, which means that come 2014, 500,000 uninsured Arkansans will become eligible for either public or private insurance.

“People with insurance tend to use it,” said Jay Bradford, Arkansas insurance commissioner. “Though many will remain uninsured, it’s likely that about 350,000 people will be newly insured, placing an additional strain on the workforce with an initial surge from those who have been without.”

The Fixes

The Workforce Initiative divided its recommendation into four broad goals to meet the current and future demand for primary care in Arkansas.

Transition to Team-Based Care

It’s paramount to transition to a new model of health care delivery, with patients at the center and a team of professionals around them in a continuous, coordinated, comprehensive approach.

Halverson said the group first worked to adopt a definition of a “patient-centered medical home” before agreeing to adopt the Agency for Healthcare Research and Quality’s recommendation.

A patient-centered medical home puts the patient at the center of the health care universe with a team of highly trained medical professionals operating around them, Halverson said.

The key to making that transition is ensuring that all are operating at the top of their license and optimally contributing their skills to maximize care and efficiency.

“Patient-centered medical homes are more than just physical locations,” Rahn said. “They are manners of delivering care that embrace a team-based approach for all patients. We will move toward addressing our workforce needs with this in mind and encourage the adoption of this type of delivery.”

The plan recommends that reimbursement reward those using a team-based approach, which includes using nurses and physician assistants to help deliver primary care.

It includes many mechanisms to ease the transition to a team-based care model, including health literacy and community health worker programs, addressing behavioral change and counseling components, and employing and expanding mobile health units.

Enhance Health Information Technology

This includes patient electronic medical records, clinical support systems, computerized medication delivery and telemedicine equipment and connections.

“The technology component is a complex one, but the benefits can be a dramatic shift in savings, safety and improved care,” said Ray Scott, state health information technology coordinator. “The goal is to provide timely access to patient information and efficiently communicate that information to providers and patients.”

The major part of this goal, Scott said, is to acquire the trained professionals needed to install, operate and maintain the health information technology efforts as well as acquire the software and hardware.

Arkansas is ahead of the curve in some areas, such as telemedicine and broadband implementation, which will need to be expanded.

Provider Education and Training

Thompson said Arkansas is experiencing modest increases in the supply levels of most health care fields, but not nearly enough to keep pace with the sea change the initiative is proposing.

Increasing the minority workforce will help reach underserved populations. The number of medical residencies in primary and preventive care, especially among those dedicated to rural practice, need to be expanded, Rahn said.

“We can also address the rural Arkansas issue by establishing a Rural Scholars Program, increasing collaborations with two- and four-year colleges and expanding the recruitment of international medical graduates into rural and primary care residency positions,” Rahn said. “Reaching potential contributors to the workforce who already reside in rural and underserved areas is key to enhancing care in those areas.”

Payment and Reimbursement

Making the proposed drastic changes in the state’s health care structure would be incomplete without restructuring the ways providers are compensated.

The initiative says that this includes adopting reimbursement strategies that incentivize team-based care and value preventive and efficient care coordination efforts, along with rewarding those using health information technology to full capacity. Those developing and maintaining practices in rural or underserved areas should also be rewarded.

“Through improved efficiency and coordination, team-based care can help physicians see more patients, provide the specialty services they are trained to provide and generally achieve better outcomes,” Thompson said. “It will also be essential to provide incentive packages and options to bring more specialists out to the rural areas where care is needed most.”

Most counseling for behavioral health issues traditionally has not been reimbursable to

providers, but under the Patient Protection and Affordable Care Act it is required that all insurers, including Medicaid and Medicare, cover those services at no out-of-pocket cost to insured patients.

“That’s one example where by simply educating primary care providers they can possibly increase revenue by billing for what they already do,” Thompson said. “So there is an education component to this as well.” ❖

THE ARKANSAS HEALTH WORKFORCE INITIATIVE

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David Wroten

Arkansas Medical Society

Jean Zehler

Arkansas Nurses Association

* Co-Chairs

Benton County

Life expectancy
80 years old

Infant mortality rate
6.5 per 1,000 births

➔ Solving the Health Disparities Puzzle

by *John*

WHY IS SOMEONE living in Benton County in northwest Arkansas expected to live 10 years longer than a resident of Phillips County in east Arkansas? Why is the infant mortality rate in Phillips County nearly twice that of Benton County?

There is no single cause to the differences in health and health care between different segments of the population just as there is no single answer to reducing those differences.

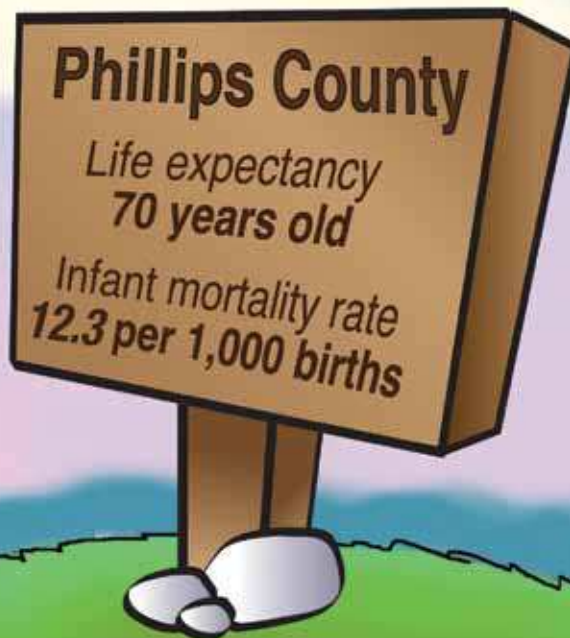
As the state's only academic health sciences center, UAMS is engaged in addressing health disparities through research and clinical and academic

programs. That work fits the call of health centers to be leaders in improving health and health care for the people they serve.

The state ranks at or near the bottom in many health categories and many east Arkansas

counties share economic and demographic characteristics with the adjacent Mississippi River Delta, practically ground zero in the South for health disparities.

“Health disparities is such »



There is no single cause to the differences in health and health care between different segments of the population just as there is no single answer to reducing those differences.

Arkansas ranks:

45th
in the incidence
of stroke

43rd
in obesity

45th
in cardiovascular
deaths

45th
in cancer deaths

43rd
in infant mortality

42nd
in the lack of
health insurance

45th
for the number
of children living
in poverty

a multi-dimensional issue because there are so many factors intertwined and interrelated that have impacted health and health care over time,” said Jim Raczynski, Ph.D., dean of the UAMS Fay W. Boozman College of Public Health.

It’s not just a matter of race, although there are persistent gaps between the health status of minorities and non-minorities in the United States. It’s not just a matter of economics, though like other social determinants of health, high poverty levels can usually be found in areas of greater health disparities.

“When you start looking at the social determinants of health disparities – access to care, poverty, education, work, living conditions – it moves you closer to the sources of a problem that has very expensive effects on health as well as the economy,” said Creshelle R. Nash, M.D., M.P.H., an assistant professor of health policy and management in the College of Public Health. “And health disparities affect us all since the costs of unreimbursed care for the uninsured or underserved is passed on to us in higher insurance premiums and health care costs.”

By the Numbers

A population of 2.9 million ranks the largely rural Arkansas among the 20 smallest states in the nation. Dismal rankings in numerous categories related to health status, incidence of disease and access to care place it among the least-healthy states.

The state ranks 45th of 50 in the incidence of stroke, 43rd in obesity, 45th in cardiovascular deaths, 45th in cancer deaths, 43rd in infant mortality, 42nd in the lack of health insurance and 45th for the number of children living in poverty. There are sizeable and growing shortages of health care professionals.

While the rankings show a disparity in health between the state and most of the nation, within Arkansas there are health disparities as well. In the fast-growing northwest region, home of Fortune 500 companies like Walmart and Tyson Foods,

the life expectancy stretches to 80 years in Benton County. The infant mortality rate sits at about 6.5 per 1,000 live births.

Travel five-and-a-half hours away, to Phillips County in east Arkansas, a part of the impoverished Mississippi Delta region and with a higher minority population, life expectancy is shortened by a decade. The infant mortality rate jumps to 12.3 per 1,000 live births.

“While many people acknowledge that racial health disparities exist, there is less consensus on the question of why they occur, but it’s clear that your opportunity for health starts long before you need medical care,” said Kate Stewart, M.D., M.P.H., an associate professor of health policy and management in the College of Public Health.

All Arkansans should have the opportunity to make the choices that allow them to live a long, healthy life, regardless of their income, education or ethnic background, she said.

In Phillips County, as is the case in every county along the eastern border of Arkansas, one in three residents lives in poverty. In Benton County the rate is about one in eight.

These trends endure for generations, in a region where there is little inherited wealth and there are still instances in which someone is the first in their family to graduate from college. In many cases, those who achieve higher levels of education leave the region in search of job opportunities, Raczynski said.

The Arkansas Center for Health Disparities, which Raczynski also directs, conducts research that continues to better identify the effects and causes of disparities while supporting efforts to reduce and eliminate them.

Partnerships and Education

Through the center’s work, Raczynski hopes to attract researchers who want to tackle projects for addressing health disparities. Funded projects to date have examined issues ranging from racial disparities in substance abuse to how health care access, affordability and quality of care relate to

health disparities. In five years, the center will have funded about \$7.5 million in research projects.

In addition to better understanding and documenting the scope of disparities, the center is one of several UAMS groups seeking to bring together community efforts that can help or rally research into finding new ways to address public health problems.

The UAMS Translational Research Institute includes a community engagement component for fostering collaborative partnerships in public health-based translational research. “One way to address disparities is to look outside health care at other sectors that may contribute to disparities,” said Stewart, who also is a part of the institute’s effort. “We may need to partner across sectors and involve organizations in housing or legal services, for example.”

A move toward a patient-centered medical home model for care also may help address disparities, Nash said. The medical home model emphasizes comprehensive, team-based care in which a personal physician is responsible for providing or arranging for the ongoing care of patients, including routine checkups, specialty care, therapy and patient education.

The goal of providing comprehensive, culturally competent care will remove many of the barriers that have reinforced disparities,” she said.

Cultural Competency

Culturally competent care – where health care professionals are aware of their own assumptions and biases and cognizant of and sensitive to the diverse cultures and health-influencing cultural factors of their patients – requires preparation. Students in medicine, nursing, pharmacy and the allied health professions all benefit from exposure to diverse cultures and situations they may encounter during their careers.

“We must have curricula formatted so that cultural competency is completely integrated into the fabric of each UAMS college curriculum,”

said Billy Thomas, M.D., M.P.H., a neonatologist and leader of the UAMS Center for Diversity Affairs. Thomas was named in 2011 the university’s first vice chancellor for diversity.

At UAMS, cultural competency is addressed through formal lectures and instruction as well as in simulation labs where students interact with simulated patients from diverse backgrounds. Perhaps most importantly, Thomas said, students learn cultural competency through experiences.

Rotations in community clinics or family medicine clinics at the UAMS Area Health Education Centers put students into situations where they see patients from underserved populations.

We strive for positive interactions where students learn the impacts and reality of health disparities and how a culturally competent provider can help,” Thomas said.

Another element of cultural competency is recruiting students from underrepresented backgrounds to the health professions. Minority students are more likely to serve the underserved and to return to their communities for careers.

The Center for Diversity Affairs – which began in the 1970s in the College of Medicine and in 2011 was expanded into a resource for all of UAMS – has an array of thriving student programs. More than 500 students from kindergarten through college participate each summer in programs that promote science and health care education, provide laboratory research experiences and offer preparation courses for the ACT, the pharmacy college admissions exam and the medical college admissions exam.

Almost all of the minority students at UAMS participated in a UAMS summer program at some point, Thomas said. While the numbers of minority students at UAMS is not as high as Thomas and others would like, he believes the diversity programs are gaining momentum and expanding.

Nash echoed the optimism for the future. “We have an amazing opportunity in Arkansas to make a difference,” she said. ❖

Rotations in community clinics or family medicine clinics at the UAMS Area Health Education Centers put students into situations where they see patients from underserved populations.

→ Seeds of Personalized Medicine Growing

By Jon Parham

IN JUST A COUPLE DECADES, the UAMS Myeloma Institute of Research and Therapy built an international reputation for dramatically improved survival rates boosted by its translational research effort.

In late 2008, the institute started one of the first – if not the first – clinical trial for multiple myeloma where treatment of each patient with the cancer was determined by the disease’s genetic fingerprint of 70 genes. Early indications show personalizing the treatment plan for each patient improves the response rate – especially for those roughly 85 percent of patients with what the institute now calls the standard version of the disease.

“The ongoing successful response to treatment in standard-risk myeloma offers an enormous paradigm shift in multiple myeloma,” said Bart Barlogie, M.D., Ph.D., Myeloma Institute director. “We continue to move from what was considered a no-cure situation to having a cure.”

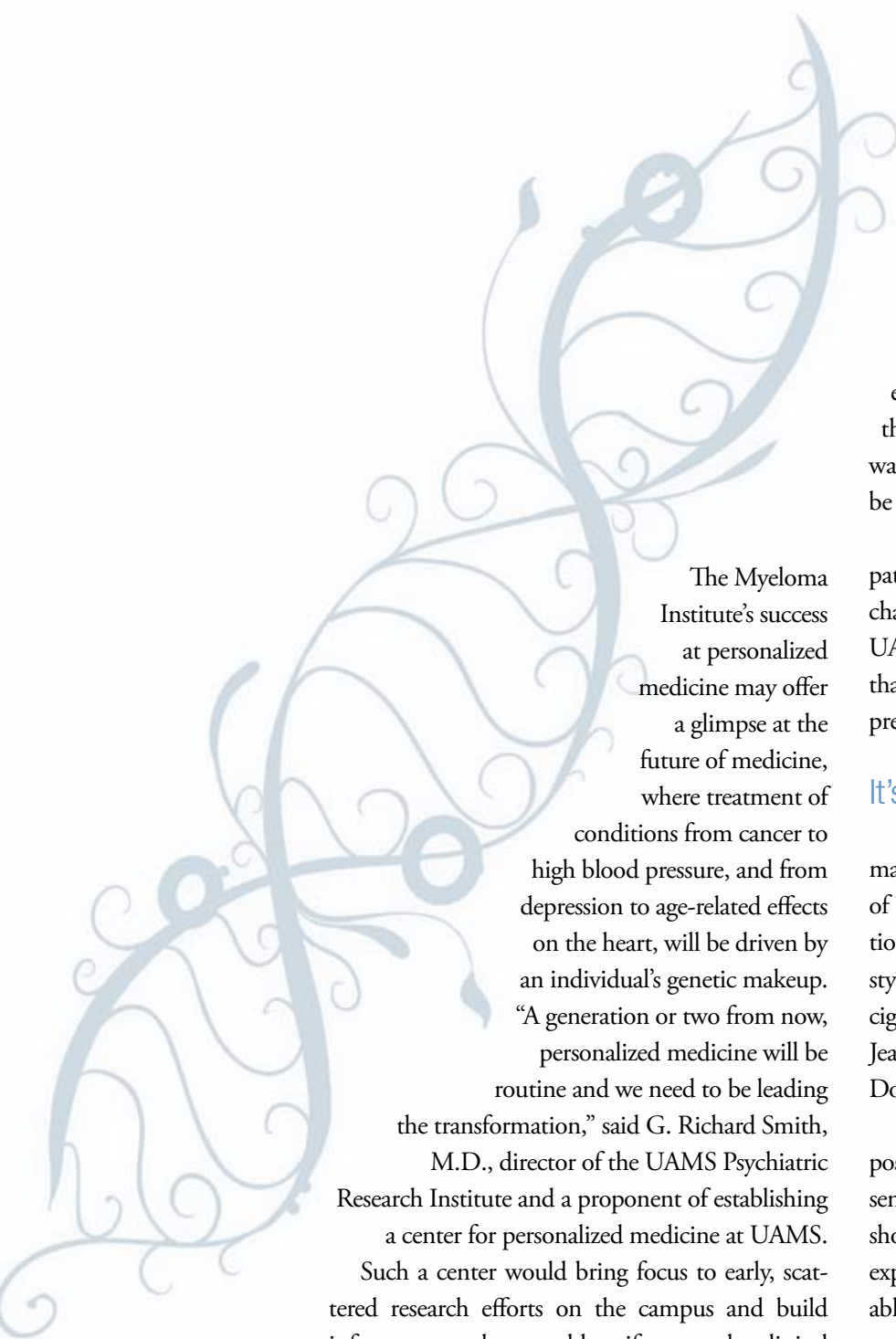
Now all new myeloma patients receive a gene expression profile, and based on genetic tests, a course of treatment is proposed. Institute scientists continue to refine the genetic profiling of the disease, allowing development of even more customized treatment plans, said Frits van Rhee, M.D., Ph.D., director of clinical research at the institute.

“The ultimate aim is to cure multiple myeloma and we do that through better individual therapy to improve outcomes of patients regardless of the type of the disease that they have,” he said. »

“We continue to move from what was considered a no-cure situation to having a cure.”







The Myeloma Institute's success at personalized medicine may offer a glimpse at the future of medicine, where treatment of conditions from cancer to high blood pressure, and from depression to age-related effects on the heart, will be driven by an individual's genetic makeup. "A generation or two from now, personalized medicine will be routine and we need to be leading the transformation," said G. Richard Smith, M.D., director of the UAMS Psychiatric Research Institute and a proponent of establishing a center for personalized medicine at UAMS.

Such a center would bring focus to early, scattered research efforts on the campus and build infrastructure that would unify research, clinical and academic resources toward that future.

Beginning to unlock the possibilities of the body's genetic code has led to high-profile successes in personalized medicine.

Understanding that cancer is not one disease but – at the genetic level – many different diseases proved a boost to the idea of personalized medicine. "All lung cancer is not the same and each type has to be treated differently, so there is never going to be one single cure for cancer," said Peter Emanuel, M.D., director of the UAMS Winthrop P. Rock-

efeller Cancer Institute.

More personalized medicine marks a shift away from medicine based on statistical knowledge of what treatment is successful with most patients. If clinicians knew that 7 to 8 percent of patients with a specific tumor genetic profile responded better to a certain treatment, for example, then outcomes significantly improve for those patients. But if they treated all patients that way, it would look like a failure because there'd only be a 7 percent response rate, Emanuel said.

"Personalized medicine is driving toward one patient, one answer," said Jennifer Hunt, M.D., chairman of the Department of Pathology in the UAMS College of Medicine. "We understand now that knowledge of a cancer tumor's genetics can be a predictor of how the disease will progress."

It's not just cancer

Genetically inherited disorders usually become manifest before age 60. After age 60, the development of disease is more dependent on the body's interactions with the environment. These may include lifestyle, nutrition and exposure to substances such as cigarette smoke, toxic chemicals and radiation, said Jeanne Wei, M.D., Ph.D., director of the UAMS Donald W. Reynolds Institute on Aging.

That does not mean, however, that tantalizing possibilities don't exist for personalized medicine in seniors. Researchers at the Institute on Aging have shown that epigenetics, or altered programs of gene expression, in the heart could make it more vulnerable to stress – and thus contribute to increased morbidity and mortality.

Their work suggests that changes in gene expression, or the way a gene is regulated in a cell, could also potentially make an older heart stronger. It could therefore, be a matter of figuring out how one's genetic code sends messages that modulates how the cells react to stress – before scientists can learn to influence the processes themselves.

"Personalized medicine means that we can do everything possible to enhance or maximize the health in an individual," Wei said. "Everyone will be different, and if we can understand and alter the

patterns of gene expression in a coordinated way, it will help improve outcomes for our patients.”

How a range of medications for treatment of conditions from depression to high blood pressure are metabolized in the body is regulated by a set of enzymes controlled by a number of genes. Some patients cannot metabolize or some metabolize too fast, possibly making the medication become toxic or ineffective. Again, knowledge of an individual’s genetic makeup will make treatment more effective by giving clinicians information for choosing the medicine that will work best.

Instead of generic practice guidelines, physicians will be guided by genetic data on specific patients. But there’s a key challenge to such personalized medicine, said William Hogan, M.D., director of the Division of Biomedical Informatics in the College of Medicine. The current electronic medical record has no place for genetic information.

“As we have learned, different genes have influence over disease response and disease progression. The question then is how do we get that information into the electronic medical record in a way that a physician can use it?” Hogan said.

Come Together

Some of the building blocks for more personalized medicine exist already at UAMS or are coming together.

Two new research floors funded through the federal stimulus act recently opened in the Cancer Institute. One of the newly recruited researchers there works with proteomics, which could impact personalized medicine as the function and processes controlled by chemical proteins in the body are better understood.

Projects in population genetics demonstrate the potential personalized medicine has for population groups. More than 22,000 women to date have donated samples of saliva as part of the Spit for the Cure study at UAMS, building a database of genetic information for breast cancer researchers seeking clues related to cancer risk and treatment.

A research data warehouse established in 2011

is building clinical information that could serve as a resource for researchers looking to turn epidemiological information into scientific investigation. Adding genetic profiles to patient data makes the warehouse even more powerful.

A center for personalized medicine could be the next step. Hunt, Smith and others believe UAMS is well positioned to have an effective program, even in a smaller state without the resources of larger academic health centers.

“It may be a leap of faith to some extent because the return on investment might not be immediate,” Hunt said. “But, if we develop a test that can predict that a treatment will not work with certain patients based on the genetic profile, then we will save money and protect patients from unnecessary, wasted therapy.”

It is a commitment to more comprehensive care and fitting for UAMS in its role as the state’s only academic health center. A center would allow coordination of resources behind initiatives with the best combination of expertise and promise for results, Smith said. It will put support behind acquisition of needed equipment for analysis and begin integrating education about personalized medicine into academic curriculums.

“When I started using genetic information for dosing and would get the pharmacogenetic information,” Smith said, “it would probably take about an hour and a half of a nurse’s time and an hour of my time per patient to review the information and results, then prepare a plan for acting on that information and explaining it to the patient.”

Faster computer analysis and interpretation has sped up the process, he said, but it highlights system changes required for wider use of personalized medicine.

“We are on the cusp of a genomics revolution in medicine,” Smith said. “This means curriculum changes, clinical practice changes, research changes and a method for retraining the current workforce. Our whole system will change.” ❖

“We are on the cusp of a genomics revolution in medicine.”



➔ COMPLEX CARE

Medical Home
Clinic Coordinates
Care, Saves Costs

By Susan Van Dusen

THE DREAM of every expectant parent is a healthy child. However, for some families this dream is interrupted by the reality of health conditions that require costly long-term therapies.

“Thanks to recent medical advances, children who would have died just 10 years ago now survive and are able to live at home with

their families. This has caused us to look at new and innovative ways to manage the care of these children, many of whom have multiple, chronic medical conditions,” said Patrick Casey, M.D., Harvey & Bernice Jones Professor of Developmental Pediatrics in the UAMS College of Medicine.

Out of that concern for coordinated care was born the Medical Home Clinic for Special Needs Children at Arkansas Children’s Hospital (ACH). Staffed by physicians in the UAMS Department of Pediatrics, the Medical Home Clinic has garnered national attention for its progressive approach to care for medically complex children, even earning praise from U.S. Health and Human Services Secretary Kathleen



Nicholas Camferdam (with his parents Rob and Allison Camferdam) receives coordinated care for his complex medical conditions at Arkansas Children's Hospital.

“Our definition of a medical home is an integrated, interdisciplinary and coordinated system of clinical care that allows us to collect data on its outcomes,” said Richard Jacobs, M.D., chairman of the UAMS Department of Pediatrics.

Each patient in the clinic continues to see his or her primary care physician as well as all needed subspecialists. The clinic staff includes pediatricians, nurses, nutritionists, social workers, speech pathologists and child psychologists. At least one person from each discipline is present for each clinic visit, ensuring continuity of care.

Each child also is assigned a nurse coordinator who is available for daytime telephone consultations on concerns of any kind, including appointment coordination, clinical decision making and acute care issues.

“Before we opened the Medical Home Clinic, I would see families drive up to three hours multiple times a week so their child could see our specialists. Now we coordinate these visits into one day so the stress and expense on these families is reduced,” Lyle said.

An article published in the May 2011 issue of Pediatrics and Adolescent Medicine outlined the cost savings in the clinic's first years. The savings for Medicaid per patient per year was \$14,148 for the first year after the initial clinic contact. For the 225 patients included in the study, that total annual savings was more than \$3.1 million. This was a result, in large part, of reduced number of hospitalizations and shorter lengths of stay.

“The program has shown that it's possible to provide coordinated care for complex children in a nurturing environment while demonstrating measurable outcomes and cost savings,” Jacobs said. ❖

Sebelius for its cost-saving efforts.

Since its inception in 2006, the clinic has served more than 800 children from across Arkansas. Children in the program have at least two serious, chronic illnesses and see at least two subspecialists.

“Our goal is to improve the health care these children receive while also cutting costs by avoiding hospitalization,” said Casey, whose serves as co-medical director of the clinic with Robert Lyle, M.D., UAMS professor of pediatrics and co-medical director of the Neonatal Intensive Care Unit at ACH.

The clinic is structured on the “medical home” concept, which was taking shape across the country when the clinic was established.

The Medical Home Clinic has garnered national attention for its progressive approach to care for medically complex children.



(From left) Ophthalmologist Romona Davis, M.D., anesthesiologist Carmelita Pablo, M.D., and oculoplastic surgeon John Pemberton, D.O., visit with a patient and family member.

➔ Patients First

UAMS Adopts Model That Puts Patients and Families at the Center of Care **By David Robinson**

AT 9 A.M. on a bright January morning, a large team of UAMS health care professionals huddled briefly outside a patient's room on the hospital's eighth floor.

A quick review of the case – a man with diabetes whose leg was amputated – was led by Susan Beland, M.D., who was joined by two medical residents and a medical student. Around them, with pens and clipboards in hand, were the bedside nurse, discharge nurse, clinical nurse specialist, case manager, pharmacist and social worker. When the group filed into the patient's sunlit room, Beland went to his bedside to learn how he was doing. His wife sat in a recliner near the bed.

The meeting lasted only a few minutes and might have seemed routine; however this was anything but standard operating procedure. At UAMS, it was history in the making – having

all of the patient's caregivers present at the same time, with him and his wife invited to discuss any of his health care issues. The goal of the meeting – known as interdisciplinary rounding – was to ensure the best possible chance for a good outcome as his recovery continued in the hospital and then at home.

“Everyone has to be on the same page,” said Rowena Garcia, R.N., M.B.A., clinical services manager on the eighth floor where interdisciplinary rounding is being piloted. “If there are questions or if there's confusion about anything related to that patient's care, it can be dealt with right there.”

Patient- and Family-Centered Care

Interdisciplinary rounding is part of a larger effort at UAMS, and a growing movement nationally, to provide patient- and family-centered care.

The new approach is summed up in the mantra borrowed by UAMS leaders: Nothing about me, without me. It emphasizes four concepts:

- **Dignity and respect for the patient** – listening to and honoring the patient and family perspectives and choices
- **Information sharing** – communicating and sharing complete information with patients and families in ways that are affirming and useful
- **Participation** – patients and families are encouraged and supported in participating in care and decision making
- **Collaboration** – patients, families, health care practitioners and health care leaders collaborate in policy and program development, implementation and evaluation

Leading the campuswide effort is John Shock, M.D., founding director of the UAMS Jones Eye Institute, who presented the concepts to UAMS physicians and campus leaders in 2011.

Shock outlined how it will not only improve care and patient satisfaction, but will lead to cost savings by improving patient outcomes. He noted that about 10 percent of the country's population consumes 64 percent of health care expenditures. Most of this cost is linked to patients with chronic conditions such as coronary artery disease, congestive heart failure and diabetes. Reducing avoidable complications and hospital readmissions related to chronic diseases would significantly reduce costs.

UAMS leaders also are motivated by the knowledge that health care spending nationally is out of control. Over the last 30 years, health care spending in the United States has been 2.1 percent more per year than the growth in gross domestic product.

“National health care reform notwithstanding, we can institute our own reforms that will allow us to actually turn back money to the federal government and improve our quality of care,” Shock said. “The bottom line is we want to take better care of patients, we want to bring down costs, and we don't want to bankrupt the country.”

On the Bandwagon

Not long after Shock presented his findings to campus leaders, Chancellor Dan Rahn, M.D., with the support of other key UAMS leaders, determined it was time for UAMS to get on the bandwagon, and he asked Shock to coordinate the effort.

An executive advisory committee and a steering committee of hospital and College of Medicine leaders were assembled. Barbie Brunner, formerly director of clinical programs education at UAMS, was named director of patient- and family-centered care.

In addition to interdisciplinary rounding, Brunner said, the entire hospital in 2011 moved nurse shift changes to the patient's bedside. The outgoing nurse meets the incoming nurse at the patient bedside to give a detailed report of the shift. This bedside report involves the patient and family to help with a plan of care and goal setting as they care for the patient and prepare for discharge.

“It's another example of improving communication, putting people in a better position to solve problems, dispelling patient anxiety, and ensuring quality and safety,” Brunner said.

Already patient satisfaction scores are trending upward. Those scores are important because increasingly they are tied to hospitals' federal Medicare reimbursement rates. In 2013, Medicare will withhold 1 percent of hospital reimbursements until hospitals can show sufficient patient satisfaction scores.

Also, UAMS Medical Center boards and committees overseeing hospital and outpatient functions soon will include staff, patients and their families.

“The goal is to have former patients involved in many of the aspects of our operational structure and of the decision making that takes place on our campus,” Brunner said.

“This is a journey,” Shock said. “It is going to be a slow but sure evolution of change in the culture.” ❖

The new approach is summed up in the mantra borrowed by UAMS leaders: Nothing about me, without me.



➔ Feels Like Home

UAMS Finds a Winner in Patient-Centered Medical Homes

By David Robinson

EVERY PATIENT deserves a medical home; that place where each patient's care is personalized and the clinic's caregivers work as a team to help patients address chronic conditions, such as diabetes or heart disease.

To that end, UAMS is applying the principles of a new model known as the patient-centered medical home. This approach requires information technology upgrades, teamwork and additional staff, but also provides more strategic contact with patients.

Patient-centered medical homes are designed to give patients the care they need and in a manner that works best for them. Secure email exchanges and telephone visits with the doctor are now possible, along with patients' ability to check their lab results electronically.

Patients with chronic diseases will notice increased monitoring. Rather than broaching issues of obesity, tobacco use and exercise as an awkward afterthought during a clinic visit,

doctors and clinic staff in a medical home work with patients on health behaviors to improve chronic conditions.

Patient-centered medical homes also emphasize evidence-based approaches to medical care. They require careful monitoring to ensure adherence to standards of care, which includes regular comparisons to practices locally and nationally.

UAMS' Family Medical Center in 2009 was the first in Arkansas recognized by the National Committee for Quality Assurance (NCQA) as a patient-centered medical home.

Now, UAMS is seeking the same recognition for its other primary care clinics:

- The Internal Medicine Clinic and the Thomas and Lyon Longevity Clinic at the Reynolds Institute on Aging
 - The six UAMS Family Medical Centers within the Area Health Education Centers (AHECs) around the state
- Charles W. Smith, M.D., executive associate



dean for clinical affairs in the College of Medicine, is leading the on-campus patient-centered medical home project at the UAMS Center for Primary Care.

“If we can prevent readmissions, hospitalizations and long-term complications of chronic diseases like hypertension and diabetes, the potential economic and care benefits are astronomical,” Smith said.

The AHEC-linked Family Medical Centers in Arkansas began implementing the patient-centered medical home model in 2008. The centers are on track to have full NCQA recognition by the end of 2013, said Mark Mengel, M.D., M.P.H., vice chancellor for regional programs and AHEC executive director.

At the Family Medical Center, the emphasis is on teamwork, said Jamie Howard, M.D., a long-time UAMS family medicine physician and medical director of clinical services in the Department of Family and Preventive Medicine.

“What we expect in a patient-centered medical home can’t be done by the doctor alone,” she said. “You have your front office engaged, the nursing area, the clinic’s radiology and lab – all are engaged along with the

physicians and advanced practice nurse.”

Another vital part of the model is the care manager, a position created just for the patient-centered medical home. The care manager checks with patients between appointments to determine how well they are adhering to their self-management goals and advises them on ways to address their disease condition.

Mengel notes studies that show traditional primary care clinics achieve good outcomes with chronically ill patients only about half the time, but when using the medical home model, good outcomes improve to about 80 percent. Demonstration projects using the model around the country have found it saves about \$1.50 for every dollar invested.

The model has been endorsed by nearly all primary care organizations. The American Medical Association has embraced it as the future of primary care.

Arkansas Blue Cross and Blue Shield and its Blue & You Foundation for a Healthier Arkansas provide financial support to the model at UAMS and elsewhere and track its results.

“It works,” Mengel said. ❖

“What we expect in a patient-centered medical home can’t be done by the doctor alone.”

➔ Nurse Practitioners & Physician Assistants Help Meet the Need

By Jon Parham

IN THE YEARS AHEAD, Arkansans may find more of their medical care delivered by someone other than a physician.

The growing shortage of primary care physicians, retirement of baby boomer physicians and increased demand for medical care are factors impacting health care access now and in the future. Growing numbers of nurse practitioners and physician assistants could mitigate these problems.

“Arkansas already has a shortage of primary care physicians and there is no way we can produce enough to meet the needs of our aging population and new patients entering the system because of health care reform,” said Douglas Murphy, Ph.D., dean of the UAMS College of Health Related Professions, which is housing a new physician assistant program under development. “In this environment, these health care providers can contribute much to health care at a very high level.”

The challenge of meeting these needs may also offer the opportunity for improvement through more coordinated team care.

“We don’t want a patient to receive care in bits and pieces in a disjointed manner, depending on what provider the patient sees,” said UAMS College of Nursing Dean Lorraine Frazier, R.N., Ph.D. “All health care professionals are going to have to work together around the patient to provide more seamless care to ensure continuity, efficiency and compatibility of treatment regimens.”

Physician assistants and nurse practitioners can conduct physical exams, order diagnostic tests, write prescriptions, diagnose disease and manage care of patients. Physician assistants work with supervision of a physician. In Arkansas, nurse practitioners need a collaborative agreement with a physician to practice or write prescriptions.

Neither profession is well-known in Arkansas. With a population of 2.9 million, Arkansas ranks 49th in the nation for the number of physician assistants, with about 150. There are just 1,289 nurse practitioners now working in Arkansas.

UAMS hopes to admit its first physician assistant students in summer 2013 for the full-time, 28-month master’s degree program.

Registered nurses and nurses with a bachelor’s degree will likely see increasing opportunities to pursue advanced degrees, said Bill Buron, Ph.D., assistant dean in the College of Nursing. Arkansas has nearly 31,000 registered nurses and almost a third of those have a bachelor’s degree in nursing.

“That means about 9,000 nurses could be mobilized to combine their education and years of health care experience with two to three years of master’s level education to become nurse practitioners in Arkansas,” Buron said. “By comparison, it would take eight years to mobilize a new primary care physician.”

Team care – using the skills of every professional to deliver the best care – will be critical to managing increasing patient volume. Students in many UAMS programs participate in team simulations, learning about their respective roles in patient-centered care and how to communicate with one another.

“Training students how to work as a team while in school improves the quality of care for patients,” said Patricia Kelly, Ph.D., who arrived at UAMS in 2011 to establish and lead the physician assistant program. “It’s about improving the continuity of care, about caring for the patient so that we are treating the patient and not the disease.”

Frazier expects team-based education at UAMS to grow in the years to come. “As a health science center we have an opportunity and a responsibility to make it happen,” she said. ❖

Team care
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Shannon Cooper, an advanced practice nurse, sees patients at UAMS.

➔ Data Warehouse CREATES Information Highway

By Jon Parham

“The data warehouse offers a powerful tool in the form of a searchable database of patient information that could ensure our patients get the best care or lays the groundwork for research leading to new treatments.”

WITH INFORMATION on more than 500,000 patients, the new UAMS data warehouse created a virtual repository of health information that is helping clinicians and scientists improve patient care.

More than 80 million lab records and more than 10 million patient diagnoses are included, along with demographic information such as gender, age and race. It has data on patient symptoms and diseases, medications, dosage and response and length of hospital stay.

“The data warehouse offers a powerful tool in the form of a searchable database of patient information that could ensure our patients get the best care or lays the groundwork for research leading to new treatments,” said David Miller, UAMS chief information officer.

The first phase of the UAMS Enterprise Data Warehouse project — a collaboration between the UAMS Translational Research Institute, UAMS

Information Technology and the Biomedical Informatics Division in the College of Medicine — went online in fall 2011 with access to inpatient, outpatient, lab and registration records systems. Six types of quality improvement reports are being developed to give clinics and clinical programs administrators a new way to track quality of care and compare performance to industry standards.

For instance, collecting data from the electronic medical record will allow managers to ensure patients meeting certain criteria — whether it’s age or condition — are receiving needed vaccinations.

Access to epidemiologic information will benefit researchers striving to turn basic science discoveries into new medical treatments. A researcher could find how many people have been treated for diabetes at UAMS who were male or over a certain age. Or they could search for patients diagnosed with high

blood pressure who are taking an ACE inhibitor medication.

“The data warehouse is the key link as far as informatics between basic science and the clinician,” said William Hogan, M.D., associate professor and chief of the Division of Biomedical Informatics in the UAMS College of Medicine. “It gives us much greater quantity of data and experience of what is happening in the clinics.”

First, the records are de-identified to meet health privacy rules. When the researcher finds a group of patients sharing a desired set of circumstances, the next step is a formal research proposal to the Institutional Review Board. With IRB approval, the researcher then can continue analysis with de-identified records or the principal investigator will be cleared to contact the patient about participation in a clinical trial.

Before technology allowed collection, storage and analysis of such massive amounts of data, researchers looking for patients



David Miller, chief information officer and William Hogan, M.D., oversee the Data Warehouse.

to participate in a clinical trial had to review paper records manually entered from much smaller patient populations.

By the end of 2012, the data warehouse is projected to include physician billing information and records from off-campus UAMS clinics and the UAMS Tissue Procurement Facility. The biorepository will improve

access to tissue specimens available for researchers in the same way the data repository provides patient information.

More importantly, Hogan said, the repository will increase the number of specimens collected by providing a platform to obtain patient consent to bank leftover tissue when not needed for patient care.

“The data warehouse initiative was aim No. 1 for the Translational Research Institute when it was started, as it boosts our ability to translate basic science discoveries into new medical treatments,” Hogan said. “At the same time, it benefits our clinical operations by providing data that helps demonstrate quality of care.” ❖



➔ Playing on the Same Team

UAMS is leaning toward interprofessional teamwork for improved patient care

By Nate Hinkel

“Patient- and family-centered care is the direction we’re trying to drive the whole institution.”

AS TEACHING HOSPITALS continue trending toward patient- and family-centered care, health care leaders are realizing the benefits of a team-based approach.

“All the evidence available suggests patients will get better care and be treated more efficiently if there is communication between different members of a health care team,” said Nicholas Lang, M.D., chief medical officer of the UAMS Medical Center. “Patient- and family-centered care is the direction we’re trying to drive the whole institution. Everything we do is being done under that umbrella and

will continue to become more ingrained in the culture here.”

And at the root of a culture change, Lang said, is education.

By definition, interprofessional education occurs when students from various professions or specialties learn each other’s routines and mission to improve collaboration and, ultimately, quality of care.

“Better teamwork and communication provides coordination that can prevent any aspect of a patient’s care from being overlooked or any corners being cut,” Lang said. “When you have a better-rounded health care team

around a patient, everybody wins.”

While the benefits are well-known, Lang said, implementing the necessary changes will take some time.

“As an institution we’re all on the same page,” he said. “Now it’s a matter of implementation. We have success stories and hope to keep those coming.”



(From left) Pharmacy students Jonathan Unwer and Chris Cooper and medical student Christina Miller practice interprofessional teamwork in class at UAMS Northwest.

First Steps

Clinically, the nursing staff is benefitting from a teamwork system specially designed for health care workers by the U.S. Department of Defense, called TeamSTEPPS.

“We’ve implemented this system in several areas of the hospital including the operating room and the emergency department, but we’ve seen the

most success in the maternal-infant areas,” said Mary Helen Forrest, R.N., chief nursing officer of UAMS Medical Center. “There’s been a clear difference in the quality of service we can provide patients when we’re working under a teamwork model.”

The evidence-based teamwork system includes ready-to-use materials and a training

curriculum to successfully integrate teamwork principles into the mission at UAMS. It was developed by the Department of Defense’s Patient Safety Program in collaboration with the Agency for Healthcare Research and Quality.

At its core, Forrest said, is the goal of patient-centered care by which her nursing staff can confidently and effectively »



Taylor Knight, a fourth-year pharmacy student at UAMS Northwest, demonstrates a metered dose inhaler holding chamber.

“When you have a better-rounded health care team around a patient, everybody wins.”

communicate with the other medical professionals treating a patient.

Lang said UAMS Medical Center has also begun interdisciplinary rounding, which matches medical students with physicians, bedside nurses, discharge nurses, clinical nurse specialists, case managers, pharmacists and social workers to ensure patients are surrounded by a team of professionals on the same page toward their recovery in the hospital and at home.

“We are fine-tuning that

process and use it as a model for what we aim to do on other units throughout the hospital,” Lang said. “We will continue this trend until we have it rolled out everywhere at UAMS.”

Education is Key

While TeamSTEPPS and interdisciplinary rounding are more focused on implementing interprofessional teamwork with an already-established group of health care workers, Lang recognizes the need to start at the beginning.

“We have some students involved in the interdisciplinary rounding effort, but the next step will be to incorporate those goals into the medical curriculum,” Lang said.

At UAMS Northwest, leaders are aiming to incorporate a teamwork culture as the regional campus begins to grow its colleges and programs. A primary care elective course began last fall that includes colleges of Pharmacy and Medicine students at the same time.

“It’s the first time we’ve had third-year students from both colleges participating in the same classroom,” said Scott Warmack, Pharm.D., associate dean of the UAMS College of Pharmacy.

“In the future, we hope to add nursing students into the mix. It’s been very successful and met with great enthusiasm from faculty and students.”

Jeanne Heard, M.D., Ph.D., vice chancellor for academic affairs at UAMS, says collaboration across campus is important.

“Getting students across all colleges at UAMS more involved with each other is key to implementing a true patient- and family-centered care experience,” Heard said.

For the last two years students in all colleges have participated in an interprofessional seminar series. Currently, an interprofessional team of educators is preparing further curricular elements so all students can develop the core competencies necessary to enter collaborative practice settings. One opportunity, led by the College of Pharmacy, will occur in a new community health and wellness center to open in July 2012. This setting will provide experiences for students through student-led interprofessional health care services and education in order to improve the health of the surrounding community. ❖



➔ Making Inroads

UAMS Community-Based Research Makes a Difference

By David Robinson

UAMS' NANCY GREER-WILLIAMS, Ph.D., M.P.H., is a newcomer to the South, but her earnest, low-key manner and a \$25 gift card helped her record the stories of nearly 100 marginalized Arkansans.

"I wish I had a reality television show because it's amazing what we don't know, what we don't see when we're driving down the street," said Greer-Williams, a researcher who spent six months in

Texarkana as part of a health disparities study.

While she was interviewing Hispanics, blacks and whites, Greer-Williams also was getting to know health care providers and finding prospective community health workers to assist those who lack access to health care. Her brand of health disparities research includes the community in determining what future research projects could best address their needs. »



Her immersion into Texarkana's underserved population is part of a long-term project that relies on community trust and lasting community partnerships. In academic circles it is known as "community-engaged research."

'To Make a Difference'

The practice of community engagement has been gaining steam in the public health arena over the last 20 years, and more recently it has become a national movement. Community-engaged research is considered so vital to advancing science that it's a core component of the federally funded Clinical and Translational Science Awards (CTSA) granted to UAMS and 59 other academic medical research institutions. UAMS, which is using the CTSA grant to support its Translational Research Institute, has made community engagement a priority.

Community engagement goes to the heart of why we're doing research, which is to make a difference in the real world," said UAMS' Greer Sullivan, M.D., who has 15 years experience in community engagement and is leading the Translational Research Institute's Community Engagement Component. "It's especially important for Arkansas, which is a poor, unhealthy state with serious health disparities."

UAMS has more than 40 community engagement researchers, including Kate Stewart, M.D., M.P.H., who for 10 years has led the College of Public Health's Office of Community-Based Public Health. Stewart has used a participatory approach to community engagement to form strong partnerships with groups in the east Arkansas Delta. Her research also has helped sustain community programs financially by showing that they actually save tax dollars.

In one example, Stewart, UAMS' Holly Felix, Ph.D., and Glen Mays, Ph.D., partnered with the

Tri-County Rural Health Network, which trains and hires "community connectors" who live and work in Phillips, Lee and Monroe counties. Those connectors help people who need long-term care to access home and community-based services. Stewart and Felix became particularly interested in their work helping the elderly and adults with disabilities remain in their homes, avoiding placement in nursing homes.

The research project that studied the savings generated by helping people remain in their homes found that the Tri-County Rural Health Network saved almost \$3 per dollar spent by Medicaid. The Community Connector Program has since been recognized nationally, and Medicaid has funded its expansion into 15 Delta counties.

"The partnership between UAMS and Tri County is a good example of how research can help sustain good programs," Stewart said. "The Translational Research Institute's support is now funding both Dr. Felix and me to do further research with Tri County on the connector model."

Hard Questions

The emphasis on community-engaged research is an outgrowth of tightening research budgets and some hard questions from national leaders about the kinds of research being funded with tax dollars. That narrowing of priorities helped spur the parallel movement toward clinical and translational science, which puts a premium on research that is most useful and relevant to public health, and a system for efficiently moving those discoveries into the public domain.

In that vein, UAMS' community engagement scientists have distanced themselves from a time when a van full of well-meaning researchers with an esoteric study topic might have driven to a

community whose residents had no input in the planning, fanned out with questionnaires for a few days to mine data, and then returned to their university campus, never to be heard from by the community again.

“The old model wasn’t working,” said Robert Price, Ph.D., a veteran community engagement researcher who leads the Division of Research and Practice Improvement for the AHEC program and the Center for Rural Health, where Greer-Williams also is based. “Today’s model of community-engaged research helps ensure that our science is relevant to the people.”

Community input is vital for vetting research ideas, said Ronda Henry-Tillman, M.D., who has 12 years of community engagement experience and directs the Cancer Control Program in the UAMS Winthrop P. Rockefeller Cancer Institute.

“Sometimes our agenda is not the community’s agenda,” said Henry-Tillman, whose research includes the Mobile Mammography Program and colorectal cancer education and screening in Mississippi and St. Francis counties. “I think a lot of times we think, ‘Well, we’ve got all this science and all we need to do is get it out there.’ What we need to do is work with the community on how to translate it; how does it fit in their community? Who is the target and how do you get that target?”

Fueling Momentum

UAMS hopes to fuel its community engagement momentum with resources provided by the Translational Research Institute’s Community Engagement Component. In 2012, the institute will establish a pool of commonly used equipment in community-engaged research, such as tent canopies and portable DVD players used in presentations,

and iPads for data collection.

“The Community Engagement Component of the Translational Research Institute has identified almost 50 funded community engagement projects across UAMS’ colleges, but many of our researchers are unaware of their colleagues’ work,” Sullivan said. “So the institute is acting as an umbrella organization to bring them together for networking, collaboration and training.”

In 2011 the component embraced Greer-Williams’ idea to create the Community Engagement/Health Disparities Research Interest Group, which held its first meeting that May. The group plans to hold future meetings, which include regular workshops and small-group discussions, to advance community-engaged research.

During its 2011 meeting, local health providers, community groups and nonprofit organizations joined with researchers representing the five UAMS colleges and Graduate School, as well as UAMS’ Center for Rural Health, Area Health Education Centers (AHEC), Psychiatric Research Institute, Dennis Developmental Center, Arkansas Aging Initiative and Arkansas Children’s Hospital.

The Community Engagement Component also has identified key partners, including the Clinton School of Public Service, Arkansas Coalition for Obesity Prevention, the Central Little Rock Promise Neighborhood, and the Arkansas Community Foundation.

In spring 2012, the component will establish a Translational Research Institute community advisory board with membership from key community leaders in Arkansas. The board will provide direction and advice to the institute and its Community Engagement Component. ❖

“Community engagement goes to the heart of why we’re doing research, which is to make a difference in the real world.”

➔ Minority Interest

Community Connectors Encourage Minority Participation in Research

By David Robinson

UAMS SCIENTISTS need diversity in their research, but there's a problem. African-Americans and other minority groups too often don't participate.

That may be about to change, at least on a small scale.

UAMS' Kate Stewart, M.D., M.P.H., and her colleagues are leading a new research project that employs "community health connectors" – trusted leaders within the community – to connect people to needed health resources and opportunities to participate in research.

In the field for only one month, Amanda Smith, a former AmeriCorps volunteer, credit counselor and fitness instructor, said she is already experiencing the rewards of helping people in need.

A graduate of Pine Bluff High School and the University of Arkansas at Pine Bluff, she is joined by two other community health connectors. They work under the guidance of Mary Olson, a doctor of ministry and the project's community principal investigator.

"We conduct community forums so the citizens can tell us what's important, rather than we or researchers making assumptions about their needs without asking," Smith said.

The community health connectors are finding enthusiasm about UAMS and its research, she said.

"We see a lot of positive attitudes and feedback during the forums," Smith said. "Sometimes people may have a closed mind about research, but once you actually educate people about it then they open their minds. You just have to let people know the valuable benefits of research to them and to everyone else."

Stewart and Olson hope the National Institutes of Health-funded project can become a national model.

"UAMS is expert in research and medicine, and our community health connectors are experts in the life of the community," Olson said. "Together you have a whole that we believe can find the ways to reduce health disparities." ❖

"Sometimes people may have a closed mind about research, but once you actually educate people about it then they open their minds. You just have to let people know the valuable benefits of research to them and to everyone else."



Amanda Smith, with the health connector project, meets with Pine Bluff residents at a community forum.



→ MammoVan Fills Gaps in Service

By Susan Van Dusen

GETTING A MAMMOGRAM is the first and most effective step toward an early breast cancer diagnosis. However, for many Arkansas women, finding a nearby mammography facility is difficult.

One solution to that challenge was unveiled in February 2010 with the introduction of the MammoVan, a mobile mammography unit operated by UAMS.

“Access is one of the major hurdles to health care, especially in primarily rural states such as Arkansas,” said Kimberly Enoch, MammoVan program manager. “By taking our services to the local communities, we’ve made it possible for women to regularly get the screening they need.”

Prior to the MammoVan’s launch, the UAMS Cancer Control Program identified 26 counties in Arkansas that lack FDA-approved certified mammography facilities. These counties are now the site of regular MammoVan visits. Partnerships were formed with area health care programs,



clinics, worksite wellness programs, health departments and other community-based organizations to promote the service within the community.

In its first two years, the MammoVan provided mammograms for 3,749 Arkansas women, including

those who are uninsured, insured and Medicare recipients.

One of those women, Betty Covington, last received a mammogram more than 10 years ago. Because Covington was uninsured, the cost of her procedure was covered by grant

“Access is one of the major hurdles to health care, especially in primarily rural states such as Arkansas.”



funding secured by UAMS for the MammoVan.

“I love the MammoVan. Everyone was so nice and professional. This is a great service that will help a lot of people,” Covington said.

The MammoVan is handicapped accessible and features

the most advanced digital radiology equipment. The three-room mobile unit is staffed by a certified mammography technologist and a clinical technician.

MammoVan patients receive their test results within two weeks, and the results also are sent to each patient’s primary care

physician. If the mammogram shows a potential abnormality, the patient is referred for follow-up to the appropriate services. ❖

➔ Building Community

By Nate Hinkel

STUDENTS AT UAMS are making good on the institution's mission to provide health care and specialty expertise not routinely available in community settings.

UAMS students across the five colleges are thrust into a culture that is rich in giving back to the unique communities across the state. So much so that it provided a pleasant surprise for College of Nursing Dean Lorraine Frazier, Ph.D., R.N., upon her arrival in fall 2011 from the University of Texas Health Science Center at Houston School of Nursing.

"Coming from a city the size of Houston, it was very refreshing to see firsthand the emphasis UAMS puts on giving back to the state," Frazier said. "I think getting students out there into communities is not only good for the people they are serving, but it's also an integral part of receiving a well-rounded education."

That mix of community involvement and health care experience is exactly the aim of a variety of community outreach projects that UAMS offers students.

Center of Service

Several of those projects stretch across disciplines and colleges at UAMS. That collaborative spirit is reflected best by an emerging endeavor sparked by a recent donation of a building to the College of Pharmacy.

Located near 12th and Cedar Streets about five blocks south of the UAMS campus, the »



"The opportunities for students are endless and students volunteer routinely."



Several of the colleges also incorporate community service into the curriculum, such as the College of Nursing, which has a community health nursing course.

building was donated to the college by Vicki and Karrol Fowlkes, of Salem, both alumni who envision its doors to be open for a student-led health and wellness community center for the uninsured.

Stephanie F. Gardner, Pharm.D., Ed.D, dean of the UAMS College of Pharmacy, agrees that educating students and making a difference in the community are the two hallmarks of this project.

“We know the value of locating a center dedicated to community outreach near UAMS,” Gardner said. “It will provide great opportunities for our students to gain experience, while providing services for people in the area and promoting good health. It’s a prime example of what UAMS is all about.”

The college’s initial vision for the building is broad, hoping to attract students from several other UAMS colleges to collaborate. Plans are being narrowed by an advisory committee made up of representatives and leaders from other areas of campus that will be contributing, including the colleges of Nursing, Health Related Professions and Public Health. Colleges at UAMS already have begun to work with community leaders to provide a variety of services, including disease management, basic dental care, medication management, patient education and immunizations.

The budding new center could possibly serve as a primary referral location for people who have been screened by students and faculty at other locations and who need follow-up care.

Amy Franks, Pharm.D., interim chair of the College of Pharmacy’s Department of Pharmacy Practice, is leading the development effort.

“Though the building was donated to the College of Pharmacy, it’ll be important for us to stress the collaborative aspect of what an opportunity this can be for educating students across UAMS and giving them experience outside of their classrooms,” Franks said. “We also want to establish this building in the community as a place that promotes good health and wellness and makes a difference.”

Reaching Out

The colleges are individually committed, as well, in their own creative ways to community outreach.

The College of Medicine reaches out in several ways to get medical students practicing and making a difference in communities. Student Sight Savers is a program held at River City Ministries in North Little Rock where students and other volunteers work with ophthalmologists and optometrists to provide complete eye exams for the underserved. College of Medicine students also volunteer at the Harmony Health Clinic in Little Rock, providing routine health care to impoverished locals and medically uninsured. It is staffed by volunteer professionals, students and doctors.

The student-run Christian Medical Association is one of several groups that organize an annual medical mission trip, but student volunteers can also be found lending a hand in the community throughout the year, such as sprucing up a local school or even serving meals at a soup kitchen.

“When I was a medical student in the 70s I don’t remember so many students working at free clinics and organizing health fairs,” said Richard Wheeler, M.D., executive associate dean for academic affairs. “While it may have been going on, I don’t recall anybody going to a third-world country for an elective or rotation. But now the opportunities for students are endless and students volunteer routinely.”

Several of the colleges also incorporate community service into the curriculum, such as the College of Nursing, which has a community health nursing course. The student nurses work at vaccine clinics, health fairs, schools and nursing homes to complete credit work.

“The community recognizes this spirit of volunteerism in our faculty, staff and students, and routinely requests our assistance,” said Cheryl Schmidt, Ph.D., R.N., associate professor and interim associate dean for academic programs. “We field calls and emails almost every week asking for volunteers. For example, one recent fall

we helped the Arkansas Department of Health give more than 500,000 seasonal and H1N1 flu vaccines throughout Arkansas.”

Schmidt said the Student Nurses Association spearheaded a drive last year to collect personal hygiene items to create 325 disaster comfort kits to be distributed by the American Red Cross in Arkansas. That effort earned the UAMS chapter of the National Student Nurses’ Association Outstanding Disaster Project Award in 2011.

“Students were so excited that they are beginning another drive to prepare for tornado season this year,” she said.

Kate Stewart, M.D., M.P.H., associate professor and director of the Office of Community Based Public Health in the College of Public Health, said students work with researchers aiming to improve communities in Arkansas and volunteer routinely alongside students from other colleges on campus. A program the College of Public Health started with the Mexican Consulate in Little Rock began offering limited health care services through its Ventanillo de Salud, or Health Window Program, in 2009. It eventually brought in College of Pharmacy students who have been providing influenza vaccines and preventive health screenings. More than 725 underserved immigrant patients have gotten a flu shot, more than 260 have been screened for diabetes, and about 250 were tested for hypertension and 185 for osteoporosis.

“It’s an amazing thing we’re able to do as students not only from the standpoint of helping out this diverse, underserved population, but also from an educational perspective,” said Corey Hayes, a third-year student from Morrilton who is the student leader for this community effort. “Just to be in there and see how much it means to them ... many of them have driven for hundreds of miles. It is very fulfilling.”

The students’ effort at the Mexican Consulate has been so successful that the college earned a Student Community Engaged Service Award in December from the American Association of Colleges of Pharmacy (AACCP). The recognition comes with \$16,000 to sustain and support



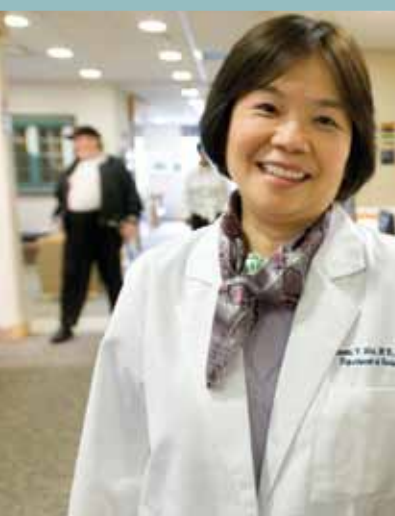
Elvira Aguirre, a UAMS interpreter, assists with health screenings at the Mexican Consulate in Little Rock.

the project, for other community efforts and for student travel to promote and present their project at professional meetings.

Students in the College of Health Related Professions have strong ties in the community, whether it’s giving a vision test to a child during a health fair or traveling overseas to boost clinical programs in underdeveloped countries.

Douglas Murphy, Ph.D., College of Health Related Professions dean, said students participate in class service projects or volunteer time outside of class to work, while faculty members organize service events to provide care to underserved populations or join medical missions that take them places like earthquake-ravaged Haiti.

“We want to graduate students who are conscious of the health needs of the communities they will serve in their career,” Murphy said. “By helping establish a foundation of service, they are positioned to be leaders as both health care professionals and citizens in working to meet those needs.” ❖



Growth Potential

Areas of excellence give philanthropists the chance to make a long-term difference **By Susan Van Dusen**

IMPACTING POSITIVE CHANGE in the rapidly evolving health care industry may seem like a difficult — if not impossible — challenge. However, at UAMS the overwhelming impact of change-makers is felt every day in the lives of patients and their families.

“UAMS has been successful in capitalizing on the tremendous expertise among our supporters in all areas of the campus,” said Lance Burchett, vice chancellor for Development and Alumni Affairs.

This includes the involvement of a wide variety of people on advisory boards and committees where their expertise has helped the university establish and expand countless programs through the years.

It also includes the powerful impact of philanthropy, which has played a large role in transforming UAMS from a charity hospital into the state’s most influential center for health care treatment, education and research.

“Deep down in the heart of every donor is an innate desire to make a difference in the world,” Burchett said. It’s that desire that leads philanthropists to support causes where they believe they can make the most impact. For many people, specialized health care is that area.

At UAMS, four main sources of revenue have historically funded infrastructure: state appropriations, federal funding, patient revenue and tuition from its five colleges and graduate school.

While these sources are essential, it’s philanthropy that has allowed for growth in specialized areas that were previously lacking in Arkansas.

“These four funding sources are certainly appreciated, but they usually don’t provide the margin necessary for areas of excellence to be developed. That’s where the support of donors, alumni, foundations and corporations can really

make a difference,” Burchett said.

Thanks to philanthropic support during the past two decades, UAMS has developed seven institutes of excellence and several specialized programs that provide the highest quality health care for Arkansans. These programs also give donors the chance to support causes near to their heart, whether it be cancer, geriatrics, genetics or other areas.

For Kent Westbrook, M.D., it’s the fact that UAMS holds expertise in many areas that makes it stronger as a whole. “By having multiple areas that people can give to, you build those up and the whole becomes more than it would have been otherwise,” he said.

Westbrook is a distinguished professor of surgery in the UAMS College of Medicine. His fundraising experience dates to the 1980s when he and James Y. Suen, M.D., co-founded and secured the initial funding for the UAMS Winthrop P. Rockefeller Cancer Institute. Suen is a distinguished professor and chair of the Department of Otolaryngology—Head and Neck Surgery in the UAMS College of Medicine.

Moving forward, Westbrook sees UAMS focusing on establishing endowments to support intellectual endeavors as opposed to bricks and mortar. “We’ve built many buildings over the past few years. Now it’s time to build endowments to sustain our programs in research, patient care and education,” he said.

These include endowments given to individuals in support of their research activities or to fund program of interest to the donor.

“We want to give our supporters the opportunity to make a meaningful long-term difference,” Burchett said. “Endowments are a tangible way to accomplish this in perpetuity.” ❖

“Deep down in the heart of every donor is an innate desire to make a difference in the world.”

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