DEAN’S MESSAGE:

What’s On My Mind

hat’s on my mind this month is the School of Medicine’s (SOM) community outreach activities. As one of the nation’s oldest medical schools, the SOM has a long tradition of community service and outreach. In the early 1800s, our outreach and education focused primarily on helping the citizens of the City of Baltimore cope with the many public health problems they faced, such as yellow fever and dysentery. More than two centuries later, our outreach efforts have extended to communities all over the world. Through our efforts, we are helping people in Maryland, across the U.S., and in developing countries in Africa, the Caribbean, and the Middle East to achieve healthier, longer, more productive lives.

In this message I will focus briefly on just a few of our outreach activities here in the state of Maryland, which are overseen by Claudia Baquet, M.D., M.P.H., associate dean for Policy and Planning, director, Center for Health Disparities, and director, Program in Minority Health and Health Disparities Education and Research. Dr. Baquet, who also serves as director of the Maryland Area Health Education Center Program and of our Center for Health Policy/Health Services Research, coordinates an extensive portfolio of the Maryland Area Health Education Center Program and of our Center for Health Policy/Health Services Research, coordinates an extensive portfolio of community outreach activities that seek to reduce and eventually eliminate health disparities in our state.

For example, Dr. Baquet oversees the Colorectal and Breast Cancer Patient Navigation (PN) Program, a pilot study launched in the spring of 2007 to implement a culturally appropriate intervention to increase Maryland residents’ knowledge of and increase their compliance with national and international breast and colorectal cancer screening guidelines. The program, which is delivered by community health workers (CHWs), provides breast and/or colorectal cancer educational presentations to individuals and groups throughout the state.

The PN program is now being developed into a protocol that can be used by CHWs across the United States who may be interested in participating in health disparities research teams.

School of Medicine Provides Medical Aid in Haiti

On January 28, the first team of faculty from the School of Medicine traveled to Haiti to administer medical aid in the earthquake-ravaged country, but that small group of five was just the beginning. The School of Medicine and the University of Maryland Medical Center are teaming with Baltimore-based international nonprofit Catholic Relief Services (CRS) to send doctors, nurses and other health professionals to Haiti in weeklong rotations over the coming months. More than 150 faculty and staff members have volunteered to be part of the relief effort.

Thomas M. Scalea, M.D., Francis X. Kelly Professor of Trauma Surgery and Director, Program in Trauma, led the first group of five when he flew to Haiti on January 28. Just two days later, Dean Reese and Gov. Martin O’Malley were on hand to see off the remaining 15 faculty and staff members as they prepared to catch a military flight to Haiti.

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Among them was Haitian native Guesly Delva, M.D., an infectious disease fellow with the IHV in Baltimore. Dr. Delva flew home just days after the earthquake to search for his family and to render aid to his fellow countymen. He located his mother safely just before leaving the U.S., and once in Haiti he spent his days working with CRS to help patients at St. Francois de Sales Hospital. The building remained intact after the earthquake, and all 22 of the clinic’s employees—including doctors, nurses, lab assistants and drivers—were located safe and sound in the days after the disaster. Many began volunteering immediately, caring for patients in makeshift tents set up around the remains of the hospital.

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In the relentless pursuit of excellence, I am Sincerely yours,

E. Albert Reece, MD, PhD, MBA

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Reaching out to disaster-stricken nations is nothing new for School of Medicine faculty. For example, in June 2008, a team from Shock Trauma went to Chengdu, Sichuan Province in China to assist with medical care of survivors from a devastating earthquake there.

The first team of School of Medicine professionals to travel to Haiti is largely made up of trauma and surgical experts. Dr. Scalea and other Shock Trauma faculty and staff have unique expertise in the types of traumatic injuries one sees in war zones, as well as some and head injuries—that they expect to treat in Haiti.

The mission to Haiti is just the latest example of the School of Medicine’s global impact. School of Medicine faculty already conduct research and see patients in 23 countries outside the U.S.
Surgery who engage in minimally invasive, laparoscopic surgery are providing great benefits to their patients, but possibly to their own detriment, according to new research from Adrian E. Park, M.D., professor of surgery at the University of Maryland School of Medicine. The study, on which Dr. Park was lead author, entailed the largest survey ever conducted of surgeons in North America who perform laparoscopic procedures. The survey found that 87 percent of laparoscopic surgeons have experienced physical symptoms or discomfort. This was especially true among those with high case volumes. Previous surveys had found only a 20-30 percent incidence of occupational injury among these surgeons. Results of the survey are being published in the March 2010 Journal of the American College of Surgeons.

Millions of patients around the world have benefited from minimally invasive surgical techniques introduced some 20 years ago. The benefits include increased safety, quicker recovery, shorter hospital stays and cosmetic advantages compared to open surgery techniques. Despite these successes, the impact of minimally invasive techniques on those who perform them is little-known and under-appreciated. “We face a pending epidemic of occupational injuries to surgeons and we can no longer ignore their safety and health,” said Dr. Park. “Sadly, it is easier for a surgeon to obtain an ergonomic assessment and direction to improve his golf swing than his posture or movement during surgery.”

Dr. Park is also executive director of the Maryland Advanced Simulation, Training, Research, and Innovation (MASTRI) Center at the School of Medicine, the first facility in the world to focus on surgical movement. “If injuries among surgeons are not addressed significantly, we’re going to face a problem in the near future of a shortage of surgeons as well as shortened career longevity among surgeons who enter, or are already in, the field,” he said.

Dr. Park says surgeons who perform laparoscopic surgery face constraints that are not part of open surgery. “In laparoscopic surgery, we are very limited in our degrees of movement, but in open surgery we have a big incision, we put our hands in, we’re directly connected with the target anatomy. With laparoscopic surgery, we operate by looking at a video screen, often keeping our neck and posture in an awkward position for hours,” said Dr. Park. “Also, we’re standing for extended periods of time with our shoulders up and our arms out, holding and maneuvering long instruments through tiny, fixed ports.”

A comprehensive 23-question survey was sent to 2,000 board-certified gastrointestinal and endoscopic surgeons in North America and abroad who are members of the Society of American Gastrointestinal and Endoscopic Surgeons, a diverse group of experienced laparoscopic practitioners. The questions were grouped in four categories: demographics, physical symptoms, ergonomics and environment or equipment. Some questions required single answers, such as “Have you ever had any physical discomfort or symptoms you would attribute to your laparoscopic operating? Yes/No.” Other questions allowed selection of multiple applicable answers.

Of 317 surgeons completing the survey, 272 (86.9 percent) reported experiencing physical discomfort or symptoms they attributed to performing minimally invasive surgery. The discomfort ranged from eye strain to neck, back and leg pain. A few surgeons also reported headaches, finger calluses, disc problems, shoulder muscle spasms and carpal tunnel syndrome. Age played a role in hand problems, with younger surgeons and those over 60 at highest risk, but there was no correlation between age and symptoms in other parts of the body.

Annual case volume emerged as a key predictor of physical symptoms. Case volume impact was seen in surgeons who had received postgraduate surgical fellowship training. Those surgeons averaged 249 cases a year, while the non-fellowship average was 192. Neck, hand and leg symptoms rose with increased case volume. “If surgeons had more than 150–200 cases a year, they were at a much higher risk,” said Dr. Park. “However, if the surgeon did many complex cases, they only needed half that number to increase the risk.”

To minimize the problems, 84 percent said they had changed their position, while 30 percent said they changed instruments or took a break. Significantly, 40 percent of all participants said they would just ignore any such problem.

Instrument design was listed as the main source of symptoms for more than 74 percent of the surgeons, while 40 percent cited operating room table setup and display monitor location. More than half of the surgeons (58.7 percent) said they were only slightly aware or not at all of recommendations to reduce symptoms from researchers in the field of surgical ergonomics. Dr. Park said the survey results provide important pieces to the puzzle, but ergonomic researchers do not know what all the issues are. As a first step toward developing solutions, he calls for a fresh, comprehensive attempt to understand the surgical workplace. “Many manufacturers and industries have been able to optimize workflow, worker safety and efficiency by characterizing their workplace, while we in surgery have done nothing. We have not seriously investigated or addressed the surgeon-patient interface and the surgeon-instrumentation interface. If you go into the cockpit of an airplane, everything is integrated. In the operating room there is very limited integration of technologies,” said Dr. Park.

Japanese Delegation Gets a Glimpse of New Stem Cell Center

Japanese science and technology officials got a peek inside the School of Medicine’s new Center for Stem Cell Biology and Regenerative Medicine when they visited campus last month.

Curt Civin, M.D., founding director of the Center, associate dean for Research and professor of pediatrics, met with the group of six officials from Japan’s stem cell research community on January 22. The six Japanese officials were visiting the U.S. to gain a better understanding of the state of stem cell research in America.

Dean E. Albert Reece, M.D., Ph.D., M.B.A., welcomed the group and voiced his hope for continued conversations between the School of Medicine and the Japanese scientific community. “We are a very research-intensive institution,” Dean Reece told the group. “When we can collaborate with scientists around the world, it only makes us stronger. Combining and exchanging ideas is what science is all about.”

The visiting group was led by Shin-Ichi Nishikawa, M.D., Ph.D., deputy director, Center for Developmental Biology, RIKEN, and Research Director, IBRI, Foundation for Biomedical Research and Innovation. Before Dr. Civin began briefing his guests on the state of stem cell research in Maryland and throughout the U.S., and the growing Center for Stem Cell Biology and Regenerative Medicine, Dr. Nishikawa thanked him for welcoming the group.

“Stem cell research is an area of great interest for our country,” Dr. Nishikawa explained. “Our government has changed us with exploring the research going on in the United States in hopes of creating new partnerships between scientists in both countries.”

Dr. Civin described his own research in cancer stem cells, and explained how he helped the new Center for Stem Cell Biology and Regenerative Medicine would bring together scientists from many disciplines to advance the field of stem cell research.

The group also heard from other faculty from the School of Medicine and the Dental School on details of their own work and how they hope the new stem cell research center will advance their science.
A new FDA-approved stent graft can keep key blood vessels open so dialysis machines can connect to the body, according to a new study led by Zvi Haskal, MD, professor, Department of Diagnostic Radiology and Nuclear Medicine, Dialysis patients often need repeated procedures, such as balloon angioplasty, to open blood vessels that become blocked or narrowed at the point where dialysis machines connect to the body. These blockages can impact the effectiveness of hemodialysis, a life-saving treatment to remove toxins from the blood when the kidneys are unable to do so. Dr. Haskal’s study indicates the new stent graft can keep vessels open longer, reducing the number of procedures these patients may need. The study was published in the February 11 edition of the New England Journal of Medicine.

“This is the first large-scale randomized study to find a therapy to be superior to the gold standard of balloon angioplasty. We found that using this new stent for dialysis patients whose access grafts have become narrowed improves graft function. It also clearly reduces the need for repeated invasive procedures and interruption of dialysis,” said Dr. Haskal. The prospective multi-center study took place at 13 sites across the country and enrolled nearly 200 patients. Ninety-seven patients received angioplasty with the new stent, which is a small metallic scaffold inserted so the patient’s arm is expanded to 93 percent when receiving angioplasty alone.

In the study, patients with the stent graft were more than twice as likely to have open vessels compared to the angioplasty-only group after six months. The recurrence of vessel narrowing, restenosis, was nearly three times lower with the stent graft, (12.7 percent vs. 77.6 percent). In later follow-up, some patients still had functioning grafts two years after the stent graft was first implanted.

Results of this research should change the way we treat hemodialysis patients. In this study, patients who received angioplasty alone were twice as likely to need additional procedures compared to those who had the stent in addition to angioplasty,” said Dr. Haskal. “That can translate into cost savings and improved quality of life for these patients, who already spend about nine to 12 hours a week in dialysis. We can now start considering grafts as something that may last for years in dialysis patients, instead of months.”

According to the researchers, the cost to treat dialysis access failure amounts to about $1 billion per year, and the number of patients needing hemodialysis is expected to continue to grow substantially over the next decade.

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Kidney failure patients often have a synthetic portal, known as an access graft, embedded into their arm before they begin hemodialysis. The access graft works like an artificial blood vessel, allowing needles to be inserted repeatedly, so the blood can be circulated out of the body, filtered in a machine and then returned to the patient’s circulatory system. Patients must undergo dialysis several times a week.

For hemodialysis, scar tissue naturally forms at the edges of the access grafts. That scarring can impede blood flow, requiring doctors to perform angioplasty to open the vessels. In that outpatient procedure, doctors insert a balloon into the blood vessel and inflate the balloon to open the narrowed artery or vein. Follow-

A recently funded project with IBM has the department testing possible software that would enable computers to analyze patient data and suggest diagnoses based on the results. “They’re going to start out looking at New England Journal of Medicine case reports, and have the computer try to outguess a human professor based on the results. “They’re going to start out looking at one challenging medical case each week. “Wouldn’t it be nice to have that level of intelligence and experience from cumulative literature and patient data, to be able to help you make a diagnosis?” asks Dr. Siegel.

“It’s really captured people’s imaginations, because skin cancer is the most common type of cancer, and melanomas has had a doubling in incidence over the last decade. In the next few years, we hope we’ll have another tool to look at these lesions that will really revolutionize the way we practice.”

SOMnews
Advocacy Day 2010
State Senator Kathy Munson of Baltimore County (center) met with (from left) Donna Parker, MD, clinical associate professor, Department of Medicine, and Associate Dean for Student Affairs; Laura Caputo, MD-III; Khola Tahir, MD-III; Christina Walsh, MD-III; and Claudia Baquet, MD MPH, professor, Department of Medicine, and associate dean for Policy and Planning.

Third-year student Oumou Diallo traveled a long and winding road to reach medical school. She details this journey in her book Torrential Flow, which was published in September 2009 and is available online from Amazon.com.

Born in Mali, West Africa, Diallo lost her father at a young age because the hospitals in Mali did not have the equipment needed to treat his heart condition. At age 11, she was chosen to participate in the Parliament of Children, an advocacy group created as a forum for children to express their views and discuss their rights. Being a child ambassador “was life changing to me,” says Diallo. “While there, I met young people like myself confined to life situations they had no way chosen to live in.”

Diallo’s chances in life expanded when her mother made the difficult decision to send her away to France during a period of political uprising in Mali. It was one of her French teachers who first encouraged Diallo to publish the stories she had written about her childhood in Mali and her experiences with the Parliament of Children. Although she chose not to do so at the time, Diallo kept the stories with her, adding new life experiences as they came along.

The most monumental of these experiences was immigrating to America, where Diallo was finally able to reunite with her mother and brothers, who had left Mali for New York. In her book, “I stress the importance of the impact of people I have met on these three continents,” Diallo says. “My own path from a single man’s family (in Africa) to getting an education in the U.S. would not have been possible without the help of the many mentors who crossed my path.”

It was one of these mentors who helped Diallo get Torrential Flow published. “I have gotten very positive reviews regarding the book, both from my friends and unknown readers. I am delighted with the outcome,” says Diallo. So delighted, in fact, she’s already working on a new book. “Whenever possible, I jot down a line or two,” Diallo admits.

But medicine is her top priority. She recently returned to Mali, for the first time in five years, to observe the work the School of Medicine is doing there, in preparation for her fourth-year AHEC rotation. “I wanted to know where the CVD site was and to meet the people from Maryland working in Mali, as well as the Malians working at the site,” Diallo explains. “I also wanted to assess what specialties were needed most. I found that surgeons are pretty scarce, as well as good anesthesiologists. My visit to Mali was a really great foundation for my soon-to-come, month-long rotation there.”

One day, Diallo hopes to return to her home country for a much longer period of time. “I’d definitely like to open a surgical center and clinic there and hopefully collaborate with various physicians and surgeons here,” she says, adding that any money she earns from her book will go toward financing this goal.

Diallo is keeping an open mind about her ultimate field and hopes to practice in either anesthesia or otorhinolaryngology-head and neck surgery. With either one, “my life experiences will be coming full circle,” she says.