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VOLUME 66

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A VIEW FROM PLUM LICK

MYASTHENIA GRAVIS IN A COLLEGIATE TENNIS PLAYER

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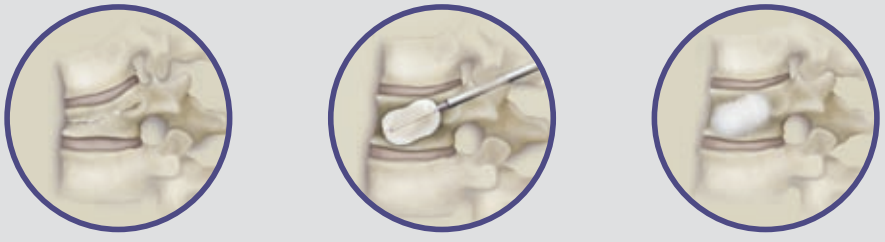

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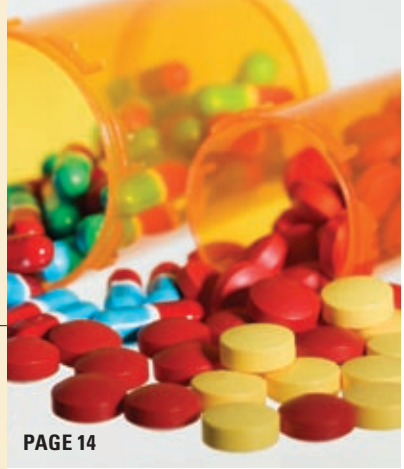
WEB SITE: www.kafp.org

E-MAIL: *gerry.stover@kafp.org*
janice.hechesky@gmail.com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THE KENTUCKY ACADEMY OF FAMILY PHYSICIANS

P.O. Box 1444 | Ashland, KY 41105-1444 | Office: 1-888-287-9339 | Fax: 1-888-287-0662

Gerry D. Stover, MS, EVP, gerry.stover@kafp.org
***Janice Hechesky*, Executive Assistant,** janice.hechesky@gmail.com

E-mail: **information@kafp.org** | Web site: **www.kafp.org**

COMMITTEE CHAIRS AND FOUNDATION

ADVOCACY COMMITTEE
Nancy Swikert, M.D.
e-mail: Ddwarrow@aol.com

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BYLAWS COMMITTEE
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e-mail: wcrump@trover.org

A. Stevens Wrightson, M.D.
e-mail: aswrig2@email.uky.edu

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e-mail: stephen.wheeler@louisville.edu

EDUCATION COMMITTEE
Charles Kodner, M.D.
e-mail: charles.kodner@louisville.edu

Paul Dassow, M.D.
e-mail: pdass1@email.uky.edu

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Robert Thomas, M.D.
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LEADERSHIP COMMITTEE
Baretta Casey, M.D.
e-mail: bcase2@uky.edu

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Michael King, M.D.
e-mail: mrking02@uky.edu

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e-mail: dennis.a.ulrich@gmail.com

KAFP FOUNDATION
Nancy Swikert, M.D.
e-mail: Ddwarrow@aol.com

Baretta Casey, M.D.
e-mail: bcase2@uky.edu

KAFP FOUNDATION-RESEARCH COMMITTEE
Kevin Pearce, M.D.
e-mail: kpearce@email.uky.email

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1325 N. Race St.
Glasgow, KY 42141
OFFICE: 270-651-4865 | **FAX:** 270-651-4751
e-mail: rbwright@tjsamson.org

President, *Gay Fulkerson, M.D.*
310 S. Main St.
Leitchfield, KY 42754
OFFICE: 270-259-4666 | **FAX:** 270-259-0061
e-mail: gayfulkersonmd@windstream.net

President Elect, *Eddie Prunty, M.D.*
601 Green Dr.
Greenville, KY 42345
OFFICE: 270-338-0600 | **FAX:** 270-338-0605
e-mail: drprunty@bellsouth.net

Vice President, *Mark Boyd, M.D.*
413 S. Loop Rd.
Edgewood, KY 41017
OFFICE: 859-301-3800 | **FAX:** 859-301-3987
e-mail: mboyd@stelizabeth.com

Treasurer, *Robert Thomas, M.D., FMC, LLC*
P.O. Box 987
Flatwoods, KY 41139
OFFICE: 606-836-3196 | **FAX:** 606-836-2564
e-mail: rjtmd@roadrunner.com

Secretary, *Ron Waldridge, II, M.D.*
60 Mack Walters Rd.
Shelbyville, KY 40065
OFFICE: 502-633-4622 | **FAX:** 502-633-6925
e-mail: r.waldridge@att.net

AAFP DELEGATES AND ALTERNATES

Delegate, *Nancy Swikert, M.D.*
8780 U.S. Hwy 42
Florence, KY 41042
OFFICE: 859-384-2660 | **FAX:** 859-384-5248
e-mail: ddwarrow@aol.com

Delegate, *John H. Darnell Jr., M.D., FMC, LLC*
P.O. Box 987
Flatwoods, KY 41139
OFFICE: 606-836-3196 | **FAX:** 606-836-2564
e-mail: johndarnellmd@yahoo.com

Alternate, *Pat Williams, M.D.*
110 S. Ninth St.
Mayfield, KY 42066
OFFICE: 270-247-7795 | **FAX:** 270-247-2602
e-mail: dr.pat@bellsouth.net

Alternate, *Mont Wood, M.D.*
200 Clinic Dr.
Madisonville, KY 42431
OFFICE: 270-825-6690 | **FAX:** 270-825-6696
e-mail: rwood@trover.org

KAFP CONGRESS OF DELEGATES

Speaker, *Richard Miles, M.D.*
124 Dowell Rd.
Russell Springs, KY 42642
OFFICE: 270-866-2440 | **FAX:** 270-866-2442
e-mail: rsmfp80@duo-county.com

Vice Speaker, *Drema Hunt, M.D.*
2223 Raintree Ct.
Ashland, KY 41102
OFFICE: 606-928-1881 | **FAX:** 606-928-1776
e-mail: dhuntmd@adelphia.net

KAFP RESIDENT/STUDENT MEMBER

Resident, *Victor Tovar, M.D.*
404 Masterson Station Dr.
Lexington, KY 40511
OFFICE: 859-323-6712 | **FAX:** 859-323-6661
e-mail: jvtovar@gmail.com

Student, *Rebecca Osborne, MS3*
537 S. 3rd St., Apt. 1611
Louisville, KY 40202
e-mail: rlosbo01@louisville.edu

REGIONAL DIRECTORS

Region I, *Alben Shockley, M.D.*
Convenient Care, 2211 Mayfair Dr., Ste. 101
Owensboro, KY 42301
OFFICE: 270-686-6180 | **FAX:** 270-683-4313
e-mail: abshock@aol.com

Region II, *P. Rob Steiner, M.D.*
485 E. Gray St., Ste. 115
Louisville, KY 40202
OFFICE: 502-852-3006 | **FAX:** 502-852-3294
e-mail: r.steiner@louisville.edu

Region III, *Kevin Pearce, M.D.*
KY Clinic 302, 740 S. Limestone
Lexington, KY 40536
OFFICE: 859-323-5938 | **FAX:** 859-323-6661
e-mail: kpearce@email.uky.edu

Region IV, *Sharon Colton, M.D.*
P.O. Box 39
Evarts, KY 40828
OFFICE: 606-837-2108 | **FAX:** 606-837-2111
e-mail: sharoncolton@bellsouth.net

DISTRICT DIRECTORS

District 1, *Wayne Williams, M.D.*
110 S. 9th St.
Mayfield, KY 42066
OFFICE: 270-247-7795 | **FAX:** 270-247-2602
e-mail: none

District 2, *Alben Shockley, M.D.*
Convenient Care, 2211 Mayfair Dr., Ste. 101
Owensboro, KY 42301
OFFICE: 270-686-6180 | **FAX:** 270-683-4313
e-mail: abshock@aol.com

District 3, *Brian Chaney, M.D.*
1010 Medical Center Dr.
Powderly, KY 42367
OFFICE: 270-377-1608 | **FAX:** 270-377-1681
e-mail: bwchaney@hotmail.com

District 4, *Brian O'Donoghue, M.D.*
111 N. Breckinridge St.
Hardinsburg, KY 40143
OFFICE: 270-756-2178 | **FAX:** 270-756-6768
e-mail: none

District 5, *Renee Girdler, M.D.*
Dept. of Family Geriatric Med., 215 Central Ave.
Louisville, KY 40208
OFFICE: 502-852-2822 | **FAX:** 502-852-2819
e-mail: rvgird01@gwise.louisville.edu

District 6, *Phillip Bale, M.D.*
1330 N. Race St.
Glasgow, KY 42141
OFFICE: 270-651-6791 | **FAX:** 270-651-3182
e-mail: balemd@glasgow-ky.com

District 7, *Meredith Kehrer, M.D.*
130 Stonecrest Rd., Ste. 106
Shelbyville, KY 41017
OFFICE: 502-647-1000 | **FAX:** 502-647-1006
e-mail: merekehrer@hughes.com

District 8, *Vicki Chan, M.D.*
125 Saint Michael Dr.
Cold Springs, KY 41076
OFFICE: 859-781-4111 | **FAX:** 859-957-2355
e-mail: chickievan@yahoo.com

District 9, *Patty Swiney, M.D.*
266 Bourbon Acres Rd.
Paris, KY 40361
HOME: 859-987-8017 | **FAX:** 859-987-8017
e-mail: PSwine@aol.com

District 10, *Michael King, M.D.*
K302 KY Clinic, 740 S. Limestone
Lexington, KY 40536
PHONE: 859-323-5264 | **FAX:** 859-323-6661
e-mail: mrking02@uky.edu

District 11, *Jon Strauss, M.D.*
305 Estill St.
Berea, KY 40403
OFFICE: 859-986-9521 | **FAX:** 859-986-7369
e-mail: jonstrauss@strauss-clinic.com

District 12, *Thomas D. Johnson, M.D.*
458 Gaskin Dr.
Jamestown, KY 42629
OFFICE: 270-824-3705 | **FAX:** 270-824-3732
e-mail: t_djohnson@hotmail.com

District 13, *Tina Fawns, M.D.*
515 Whitaker St.
Morehead, KY 40351
OFFICE: 606-780-7276 | **FAX:** None
e-mail: tnfwn@aol.com

District 14, *Joe Kingery, M.D.*
750 Morton Blvd., Rm B-440
Hazard, KY 41701
OFFICE: 606-439-3557 | **FAX:** 606-435-0392
e-mail: jeking0@email.uky.edu

District 15, *Sharon Colton, M.D.*
P.O. Box 39
Evarts, KY 40828
OFFICE: 606-837-2108 | **FAX:** 606-837-2111
e-mail: sharoncolton@bellsouth.net

message from the PRESIDENT

North Carolina has a great start on the Patient Centered Medical Home. Their program is working well, and they like it. I was privileged to talk with many AAFP members from many states and gain ideas that we may be able to use here in Kentucky.

Having just returned from the North Carolina Academy of Family Physician's winter meeting in Asheville, N.C., I wanted to advise you of some of the things I learned at that meeting and at the AAFP annual meeting in Boston. North Carolina has a great start on the Patient Centered Medical Home. Their program is working well, and they like it. I was privileged to talk with many AAFP members from many states and gain ideas that we may be able to use here in Kentucky. We need to be on the front lines of developing patient centered medical homes here in Kentucky. Other non physician groups will want to be in charge of the funding. Everyone needs to be at the table and have an equal share in deciding how the funds are used. Also, some large companies such as IBM are looking for communities which have great primary care, especially family physicians. They seek out physicians who keep their costs low and prevent hospitalizations for their employees. Paul Grundy, M.D., M.P.H., a physician who works for IBM, explained that IBM has implemented a policy that their employees do not have to pay anything to see primary care. Co-pays and deductibles are only for specialists' (now known as "partialists") visits. We must be ready to provide well care, not just sick care, and work diligently for health and wellness.

While in Boston, we also sent e-mails to Congress. Thank you for writing, calling, and e-mailing your congressmen and congresswomen. Keep up the good work. Remember to send in your donation to FamMedPac. Lori J. Heim, M.D., gave an update from Washington, D.C. She met with President Obama, and he is supportive of primary care. We will continue to watch what Congress is doing. Hopefully, we can have a positive impact, and then????

October 13, 2009
David Blumenthal, M.D., MPP
National Coordinator for Health Information Technology
Department of Health and Human Services
200 Independence Ave., S.W.
Washington, D.C. 20201

Dear Dr. Blumenthal,

The Kentucky Academy of Family Physicians (KAFP) is very interested in addressing the need for: technical infrastructure to allow for data exchange with health care facilities; increasing usage and access of electronic health record systems; and creating Regional Health Information Organizations (RHIOs) that will provide the technology bridge for health care data across the Commonwealth of Kentucky. The reason we are interested in addressing these needs is that research findings, from medical journals to the Congressional Center Budget Office, have overwhelmingly shown that utilization of healthcare technology will reduce health care costs and at the same time improve patients' health outcomes.

The Kentucky Health Information Exchange (KHIE) has developed a work plan to address the above needs, and KAFP is committed to working towards successful implementation of this plan. KAFP and other stakeholders have provided significant input into this plan, and we are confident

of KHIE's abilities to complete all tasks in the specified timelines.

The KAFP has found through focus groups with its members that the significant start-up cost associated with transforming a paper-based medical practice to an electronic, patient-centered primary care practice is beyond the financial resources of the majority of our members. Also, we know that financial and technical resources available to family physicians to assist with this transformation are limited.

The KAFP is confident in KHIE's abilities to coordinate effectively with all partners and stakeholders to implement the key components of the work plan. KAFP believes that KHIE has demonstrated accountability and responsibility with the current Medicaid transformation grant.

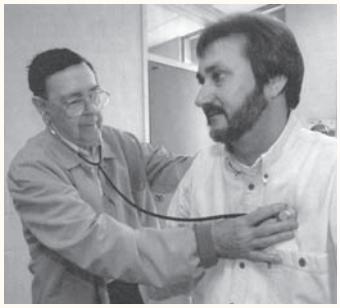
National discussion on health care reform has focused on the need for primary care and implementation of the patient centered medical home (PCMH) delivery model. KAFP believes that the spark that started this movement was the Kentucky Cabinet for Health and Family Services' Kentucky Patient Access and Care Services (KenPAC) program. The major component of KenPAC is the establishment of a personal relationship for Medicaid recipients with a primary care physician who will coordinate their care. The Cabinet worked with physician leaders of KAFP, other medical associations, and patient advocacy groups to develop KenPAC. KAFP believes that the development and successful implementation of KenPAC demonstrates the capacity of the Cabinet to pull together groups of diverse interests to achieve an initiative that benefits all the people of the Commonwealth of Kentucky.

The Kentucky Academy of Family Physicians (KAFP) is very interested in addressing the need for: technical infrastructure to allow for data exchange with health care facilities; increasing usage and access of electronic health record systems; and creating Regional Health Information Organizations (RHIOs) that will provide the technology bridge for health care data across the Commonwealth of Kentucky. The reason we are interested in addressing these needs is that research findings, from medical journals to the Congressional Center Budget Office, have overwhelmingly shown that utilization of healthcare technology will reduce health care costs and at the same time improve patients' health outcomes.

KAFP believes that KHIE has the intellectual capital and the commitment of it partners and stakeholders to accomplish the tasks at hand. We, Kentucky's family physicians, stand ready to serve!

Gay Fulkerson, M.D.
President

A VIEW FROM PLUM LICK



Dr. Paul Maddox examines Charles Back of Jackson at the Wolfe County Health Care Center. Credit for photo: Bob Warner/ Kentucky Monthly

"This is Dr. Maddox, how can I help you?"

That's the way he still answers the phone every time it rings, even though he'll soon be 83 years old.

We're seated at a table in his home in Wolfe County, just off the Mountain Parkway. Family albums surround us. We talk about his retirement, all the years he's spent helping people.

"How was it in the beginning when you first came here 56 years ago? Were you the only doctor in Wolfe County?"

"No, there were two others. I thought they were old, but I think they were just boys. I started out charging three dollars for an office call. They only charged a dollar for an office call.

"They pulled teeth. So, they'd pull teeth in the day and sometime in the middle of the night the patient was bleeding, and he'd come to see me, and I'd go into the office and put a stitch in his jaw, or whatever. I charged them three dollars, and they thought I was robbing them.

"We had a house with a well in the front yard and a privy in the backyard. And after awhile the well went dry, and my wife was carrying water across the road to wash diapers. There wasn't any Pampers then—just a screaming baby and washing diapers.

"The day-to-day (practice) was just sick kids and lacerations and nail puncture wounds and everything else that everybody sees, you know, in everyday practice. Sore throats and tonsillitis. Ear aches and all that sort of thing. I did a lot of sewing. Minor fractures."

"How many babies did you deliver in your time?"

"All together, over 6,000."

"And what did you charge?

"Sixty dollars. A lot of them, nothing."

"What was your greatest challenge?"

"To see every sick person. Nobody had an appointment. Everybody who got sick got seen that day. So I'd get up every morning and say 'everybody who walks through that door today gets seen even if it takes me all night.'

"About the 11th year we were here, we'd built up to a hundred patients a day, seven days a week—that's Saturdays, Sundays, 4th of July, Christmas, everyday. And for 22 years, we averaged over 100 patients a day, seven days a week. Now this means that a patient was sick on Christmas Day, and say they'd come in at midnight on Christmas Day, for three dollars or for nothing, they'll be seen by an M.D. Or if it was something I couldn't do, I'd get an ambulance, and I'd send them out and see that they are taken care of. So the challenge was to see every sick person and never go to bed until you've seen every one of them."

"Did you have a nurse?"

"No. What I did was I picked up a local high school girl who worked a little, and then, time to time, we picked up mostly high school graduates and one by one trained them. We all the time were building up to 100 patients a day. We added more personnel and we trained them. What we did was to take every girl and teach them to do all the procedures. 'Little girl, you take X-ray, give shots, do lab work, help with the delivery.' They were interchangable. You can't do that now."

"House calls?"

"I'd run around with a little bag. Drove as far as I could in a car and sometimes they'd meet me with a horse or a mule, and if they couldn't do that, somebody would come along and be nice enough to carry my bag for me. We'd walk."

As my wife and I drove back down the Mountain Parkway, we gave thanks for not having to walk. And we promised never to forget all those early medical pioneers who have paved our way.

Thank you, Dr. Maddox.

Happy retirement!

"I'D GET UP EVERY MORNING AND SAY 'EVERYBODY WHO WALKS THROUGH THAT DOOR TODAY GETS SEEN EVEN IF IT TAKES ME ALL NIGHT.' ABOUT THE 11TH YEAR WE WERE HERE, WE'D BUILT UP TO 100 PATIENTS A DAY, SEVEN DAYS A WEEK—THAT'S SATURDAYS, SUNDAYS, 4TH OF JULY, CHRISTMAS, EVERYDAY. AND FOR 22 YEARS, WE AVERAGED OVER 100 PATIENTS A DAY, SEVEN DAYS A WEEK."

David Dick, *David Dick, retired CBS News correspondent, professor emeritus of the University of Kentucky, is the author and publisher of 13 books about Kentucky and Kentuckians. His works include The Scourges of Heaven, a historical novel set in 1833 during the first of four cholera epidemics to sweep across Kentucky. He is currently undergoing research for The History of Medicine in Kentucky to be published in 2012 by University Press of Kentucky. He lives and works with his wife, Lalie, in Bourbon County, on a farm purchased in 1799 by his ancestors. www.plumlickpublishing.com*

Myasthenia Gravis IN A COLLEGIATE TENNIS PLAYER

AUTHORS: Jonathan A. Becker, M.D.; Jessica R. Stumbo, M.D.; Robin A. Gault, MS; Amy L. Meadows, MS, ATC, CSCS

AFFILIATION: University of Louisville Primary Care Sports Medicine Fellowship and Jewish Sports Medicine

CORRESPONDENCE:
Jonathan A. Becker, M.D.
University of Louisville Primary Care Sports Medicine Fellowship
201 Abraham Flexner Way, Suite 690
Louisville, KY 40292
Phone: (502) 852-5499
Fax: (502) 852-4944
E-mail: jon.becker@louisville.edu

KEYWORDS: Myasthenia gravis, muscle weakness, sports

INTRODUCTION

Myasthenia Gravis (MG) is a relatively common neurologic disorder affecting approximately 25,000 persons in the United States. Age of onset peaks in the second or third decades of life, thus placing young, previously healthy people, including athletes, at risk.[1] Rarely reported in elite athletes, appropriate diagnosis and treatment may allow for prompt return to play.

CASE REPORT

A 20-year-old collegiate women's tennis player presented with an acute onset of facial weakness and numbness that occurred during a pre-match warm up. Exam revealed unilateral facial droop and loss of strength in the left cheek. She had difficulty squeezing her eyes shut but no ptosis, diplopia, or other ocular symptoms. Computerized tomography (CT) scan of the brain, blood count, and metabolic panel were normal. She was diagnosed with Bell's palsy and placed on a five-day course of corticosteroids. Over the ensuing days, she developed numbness of the lips and tongue, with associated swallowing difficulties. She developed dizziness during an attempted return to tennis, prompting restriction from sport and treatment with promethazine and meclizine. Magnetic resonance imaging (MRI) of the brain was performed and was normal.

Over the next two weeks, return to play was again attempted after a subjective improvement in symptoms. However, the dizziness and facial weakness during activity or times of stress recurred. Generalized fatigue, exacerbated by activity, was also noted. Subsequent evaluation included complete blood count, comprehensive metabolic panel, rapid plasma reagin, thyroid stimulating hormone, creatine kinase (CK), vitamin B-12, folate, sedimentation rate, and C-reactive protein levels. The only abnormalities were a modest elevation

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AT THIS TIME, THERE ARE NO SPECIFIC GUIDELINES FOR THE ATHLETE WITH MG BEYOND THE GENERAL RECOMMENDATION THAT THE ATHLETE AVOID ACTIVITIES THAT EXACERBATE SYMPTOMS. RESPIRATORY MUSCLE WEAKNESS LIMITS ACTIVITY AND CREATES CONCERN FOR RESPIRATORY EMERGENCIES.

of her liver enzymes and CK level. Repeat MRI with angiography of the brain was only significant for chronic sinus disease, and a 10-day course of antibiotics was prescribed.

Activity-related symptoms had persisted for nearly one month when the athlete reported an episode of airway constriction during practice. This prompted a neurology consultation and a preliminary clinical diagnosis of MG. Testing revealed elevated levels of acetylcholine-receptor blocking antibodies (62 percent; normal < 15), acetylcholine receptor modulating antibodies (41 percent; normal < 20), and serum acetylcholine (26 nmol/L; normal < 0.5). Repetitive nerve stimulation (RNS) of the accessory nerve resulted in a 20 percent decrease in amplitude post-exercise (Fig 1). Electromyographic findings were consistent with a post-synaptic neuromuscular junction deficit without evidence of a myopathy. CT scan of the chest with intravenous contrast revealed thymic hyperplasia without evidence of a mass.

The studies supported a diagnosis of MG, and treatment with pyridostigmine was initiated at 30 milligrams three times a day. Over the subsequent month, this was titrated up to a total daily dose of 600 milligrams per day. She returned to tennis without symptoms and engaged in all team activities. During subsequent months, she underwent thymectomy and received a course of corticosteroids after surgery. She returned to activity two to three weeks later, discontinued the corticosteroids, and was maintained on pyridostigmine therapy. Six months after surgery she was participating in tennis and all team activities without restriction.

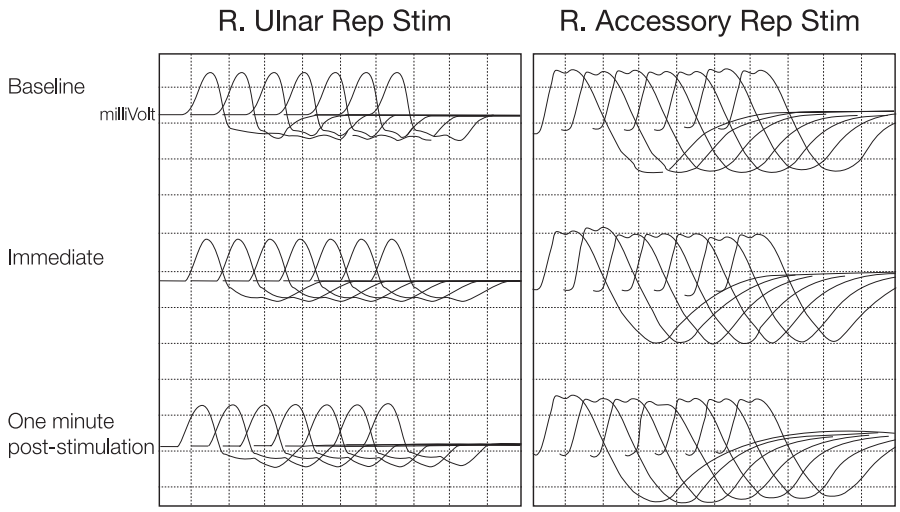

FIGURE 1. Repetitive nerve stimulation test displaying a normal study in the right ulnar nerve (left) compared to a >10% decrement of compound muscle action potential (CMAP) in the right accessory nerve (right).

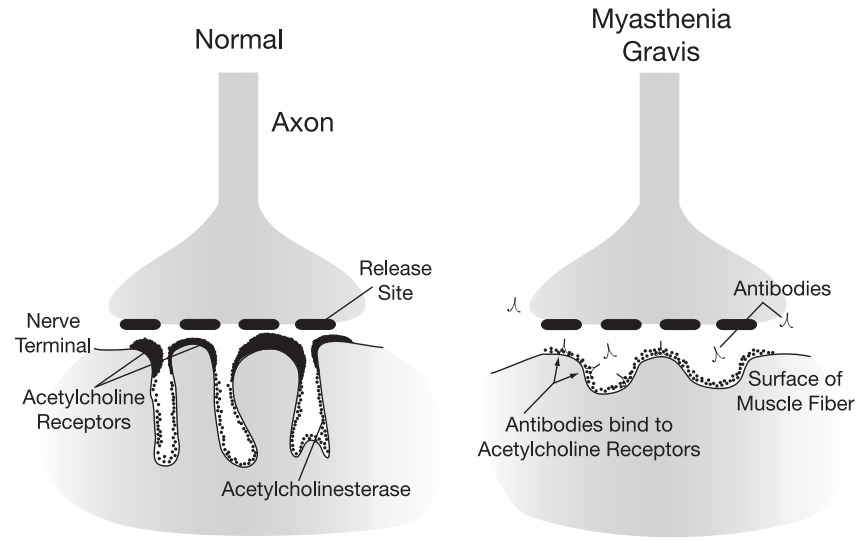

FIGURE 2. This illustration represents the appearance of the normal neuromuscular junction site (left) compared to a patient with myasthenia gravis that has undergone antibody-mediated destruction of the acetylcholine receptors (right).

DISCUSSION

Myasthenia gravis (MG) is an autoimmune disorder that affects acetylcholine receptors at the neuromuscular junction (Fig 2). Up to two-thirds of the normal receptors can be destroyed by this antibody-mediated process.[2] Weakness and fatigue of the skeletal muscles are the hallmark symptoms. Repetitive activity worsens symptoms, and rest relieves them. Facial, extra-ocular, and eyelid muscles are commonly affected, with the majority of patients developing generalized weakness.[3] The disease can progress to affect proximal limb and respiratory muscles. In the past, respiratory infection and/or failure would lead to death in 25-30 percent of those with MG.[1,3] However, advances in therapy and intensive care management over the last four decades have dramatically improved the prognosis.[4]

Confirmatory testing for MG can be performed in a number of ways. An immunologic assay to detect circulating acetylcholine receptor antibodies is the first step in the laboratory confirmation of MG. However, 6-12 percent of patients have seronegative MG. Use of a short acting acetylcholinesterase inhibitor, edrophonium, can lead to a dramatic and rapid reduction of symptoms, but this test lacks specificity. Repetitive nerve stimulation (RNS) studies are the most frequently used electrodiagnostic test for MG. This test is performed by placing the electrode over the endplate region of a muscle and repetitively stimulating the motor nerve. An RNS study is considered positive if the decrement is greater than 10 percent (Fig 1).

Among those with MG, disorders of the

thymus are common, so imaging of the mediastinum is performed. Thymic hyperplasia is seen in 60-70 percent and thymoma noted in 10-15 percent.[1] Evaluation for autoimmune disorders such as thyroiditis, Grave's disease, rheumatoid arthritis, and systemic lupus erythematosis is recommended. The patient should also be tested for conditions that may worsen symptoms or interfere with treatment such as thyroid disorders, infections, asthma, tuberculosis, diabetes, and gastrointestinal or renal disease.[5]

At this time, there are no specific guidelines for the athlete with MG beyond the general recommendation that the athlete avoid activities that exacerbate symptoms.[6] Respiratory muscle weakness limits activity and creates concern for respiratory emergencies. Participation in more extreme conditions, specifically heat, may pose further restrictions. Generalized fatigue and weakness may diminish performance and predispose the athlete to orthopedic injuries. In the past, MG was a disabling condition, but treatment advances have allowed patients to lead normal lives. These treatments include immunosuppressive agents, steroids, anticholinesterases, and immunoglobulins. Corticosteroids ought to be used with caution due to the effects on general health and the possibility of inhibiting normal muscle function.[7] Thymectomy is considered for most, since the thymus is thought to drive the autoimmune process in MG.[1] Trials of inspiratory muscle training programs have shown improved endurance of respiratory muscles, but without associated improvement in lung function.[8,9] Interventions such as creatine supplementation[10] and whole body cooling during exercise[11] have shown benefits, but these studies contained few participants.

Myasthenia gravis creates challenges for the athlete as well as the clinician. Weakness and fatigue of the skeletal muscles can inhibit training and predispose to injury. Patients displaying respiratory symptoms should be assessed carefully to determine if they can participate in sports safely. Athletes with MG need careful monitoring, and return to play should proceed conservatively. Future observations and study are needed to provide more specific recommendations regarding participation in athletics and more effective training methods.

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Jonathan A. Becker, M.D.
Assistant Professor in the Department of Family and Geriatric Medicine at the University of Louisville School of Medicine and Director, Sports Medicine Fellowship, University of Louisville and Jewish Hospital Sports Medicine;
Jessica R. Stumbo, M.D.
Assistant Professor in the Department of Family and Geriatric Medicine at the University of Louisville School of Medicine and Associate Director, Sports Medicine Fellowship, University of Louisville and Jewish Hospital Sports Medicine;
Robin A. Gault, M.S.
Senior student at the University of Louisville School of Medicine;
Amy L. Meadows, M.S., A.T.C., C.S.C.S.
University of Louisville Athletic Department

MYASTHENIA GRAVIS (MG) IS A RELATIVELY COMMON NEUROLOGIC DISORDER AFFECTING APPROXIMATELY 25,000 PERSONS IN THE UNITED STATES.

In recent years, Americans have learned *how to eat* by learning *what not to eat*. Is it working?

AMERICANS CONTINUE TO BE OVERWEIGHT AND UNDERNOURISHED.

Now a shift in thinking is under way to help Americans "get more nutrition from their calories," as recommended by the 2005 Dietary Guidelines for Americans.

As health professionals, you can play a pivotal role in educating your patients on how to base their food decisions on a food's total nutrient package rather than solely on what to avoid, such as calories or fat.

The nutrient rich foods approach is a fresh, realistic solution to help people evaluate food and beverage choices and get more nutrition per calorie, build healthier diets and achieve better health. Based on the concept of nutrient density, a long-standing dietary principle and the cornerstone of the Dietary Guidelines and MyPyramid, the nutrient rich foods approach can help Americans learn how to choose nutrient-dense foods and beverages first within each basic food group – milk, fruits, vegetables, meat & beans, and grains. Recent research shows consumers view the nutrient rich foods approach to eating as a new and positive way to think about making healthy choices – they like that it shifts their thinking from how not to eat to *what to eat*.

Help your patients embrace the nutrient rich foods approach. Show them that nutrient-rich foods are familiar and easy to find, so healthy eating doesn't have to be difficult, stressful, or negative. Visit **www.3aday.org** for more information, including science-based resources, recipes, meal ideas and a supermarket shopping list to help your patients build and enjoy a nutrient-rich lifestyle.

MyPyramid.gov
STEPS TO A HEALTHIER YOU

3-A-Day Milk Cheese Yogurt

These health and nutrition organizations support 3-A-Day™ of Dairy, a science-based nutrition education program encouraging Americans to consume the recommended three daily servings of nutrient-rich low-fat or fat-free milk and milk products to improve overall health.

AMERICAN ACADEMY OF FAMILY PHYSICIANS
STRONG MEDICINE FOR AMERICA

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

eat right. American Dietetic Association

NHMA National Hispanic Medical Association

NMA

SCHOOL NUTRITION ASSOCIATION

TOP FIVE FOUNTAIN OF YOUTH FOODS

Americans are living longer than ever before. With life expectancy hitting a record high of 77.6 in 2005, anti-aging has become an enormous focus, and food choices play a big role. In fact, America's 78 million boomers are driving the demand for functional and fortified foods that have been shown to ward off the effects of aging. People of all ages can benefit from the top five "Fountain of Youth" foods that can help them look better, feel younger and achieve healthier diets.

Top researchers agree a well-balanced nutrient rich diet of low-fat or fat-free dairy, fruits, vegetables, whole grains, fish and vitamin E- foods can fend off aging and is nature's key to the Fountain of Youth.

DAIRY

The older you are, the greater the risk of osteoporosis. As you age your bones become weak and break more easily. There's no comparison to the value of milk, cheese and yogurt when it comes to having strong bones and teeth for a lifetime. Implementing a regular fitness program that includes weight-bearing exercises, and eating a calcium-rich diet are the best ways to avoid the increased risk of osteoporosis. Within the next year, consumers will be able to make more informed decisions with the help of a new FDA-approved label on osteoporosis-fighting foods. For beautiful bones, you can't beat low fat dairy with nine key vitamins and minerals.

FRUITS AND VEGETABLES

Foods high in antioxidants, such as berries, broccoli, tomatoes and cantaloupe, may help slow the aging process. Studies show that certain antioxidants -- Vitamin C, Vitamin E, selenium and Vitamin A -- nourish and protect skin to extend its youthful appearance. These same antioxidants also act as a defense shield against cell and tissue damage, reducing the risk of contracting certain diseases. For glowing skin, eat more fruits and vegetables.

WHOLE GRAINS

The natural antioxidants and fiber in whole grains, such as oats and wild rice, improve heart function and have been shown to decrease the risk of diabetes by six percent. However, refined grains, such as white rice, are stripped of most nutrients, and do not provide the same benefits as whole grains. For a healthy heart - go for whole grains.

FISH

The American Heart Association reports that eating fish such as salmon and tuna at least twice per week reduces the incidence of stroke and lowers the chance of heart disease. Fish contains protein and omega-3 fats, which are vital for heart health.

Arlene Murrell, MS, RD, LD, CLE
Nutrition Affairs Account Manager

Arlene Murrell is a registered dietitian and certified lactation educator and currently serves as the Nutrition Affairs Account Manager for the Southeast Dairy Association. Arlene brings extensive experience in public health in New York City, South Carolina and Georgia to the Dairy Association. As Director of Nutrition for the Women, Infant and Children (WIC) services program, Arlene provided nutrition expertise to the medical community for over 20 years.

An accomplished public speaker, Arlene has conducted presentations for multiple university health programs, as well as the Utah Nurse's Association; Kentucky Cabinet for Health Services; North Carolina Department of Environment, Health and Natural Resources Division of Maternal and Child Health; and the Catawba, N.C. Health District Teen Pregnancy/Parenting Project.

Arlene received her Bachelor of Science degree in foods and nutrition from Marymount College in Tarrytown, N.Y. She completed her dietetic internship and earned her Master of Science degree in foods and nutrition from Winthrop College in Rock Hill, S.C. She is an active member of the American Dietetic Association, the Georgia Dietetic Association and the Greater Atlanta Dietetic Association.

At the dairy association, Arlene consults with key health professionals and helps develop teaching resources. She enjoys teaching health professionals and consumers the importance of dairy throughout life.

VITAMIN E FOODS

A sharp memory is just as important as a healthy body. Foods rich in Vitamin E, such as nuts, seeds and fortified cereals, are nature's best protection against dementia. In fact, a study by the *Journal of the American Medical Association* revealed that eating such foods has better brain-boosting results than taking Vitamin E supplements.

Remember that The Fountain of Youth is as close as your refrigerator! Regular exercise and a well-balanced diet that includes low-fat or fat-free dairy, antioxidant-rich fruits and vegetables, whole grains, fish and Vitamin E-rich foods is the anti-aging prescription for strong bones, glowing skin and a healthy heart and mind.

MEDICATION ERRORS

Of all malpractice claims filed, approximately 30 percent involve drug-related injuries. An average payment of $99,721 was made for 2,195 out of the 6,646 claims reported to the Physician Insurers Association of America during the period 1985 through 1992.

Health care professionals have almost unlimited opportunities to make medication errors. With greater than 8,000 drugs to choose from, the most educated professional health care providers make medication errors, and somewhat less experienced providers compound the problem.

The Institute of Medicine's report, *To Err Is Human*, indicated that approximately 3.75 billion drugs are administered annually to inpatients. In one large teaching hospital, the medication error rate was estimated to be 3.13 percent. Most medication errors are not serious; however, acknowledged medication errors killed 7,391 people in 1993.

Ten common causes of medication errors are listed in Table 1. Other causes include infusion pump/parenteral administration errors, inadequate monitoring, faulty drug stocking or delivery methods, preparation errors, lack of standardization, and confusion about a patient's identity.

TABLE 1

Ten Common Causes of Medication Errors

- Sleep deprivation.
- Mental lapses and fatigue.
- Inadequate knowledge of drugs.
- Inadequate knowledge of a patient's existing medical conditions.
- Use of multiple drugs.
- Allergies.
- Deviations from medication rules and procedures.
- Faulty drug identification.
- Transcription and handwriting errors.
- Dosage errors.

LEGAL ISSUES REGARDING MEDICATION ERRORS

Of all malpractice claims filed, approximately 30 percent involve drug-related injuries. An average payment of $99,721 was made for 2,195 out of the 6,646 claims reported to the Physician Insurers Association of America during the period 1985 through 1992. Anyone who manufactures, sells, distributes, prescribes, dispenses, or administers drugs, as well as the health care facility that employs them or places the medication in their formulary, can be sued for patient injuries.

TABLE 2

Traditional Defenses To Negligent Medication Injuries

- Lack of proximate causation.
- Bad outcome or other explanations for patient injuries.
- Contributory and comparative negligence.
- Statute of Limitations.
- The Federal Tort Claims Act, which specifically protects federally employed health care providers from liability.

THEORY OF LIABILITY

If a health care provider sued for a medication error is found liable, it is generally under the theory of negligence. Negligence is a type of tort that arises from an injury caused by conduct that deviates from a "standard of care." Medical malpractice is a type of negligence that denotes an injury to a patient caused by a health care provider's conduct that deviates from professional standards of practice expected within the profession. In a malpractice claim based upon medication error, a jury assesses a health care provider's conduct to determine whether it adhered to the professional standards of practice required by both his profession and the law. In determining the strength and weaknesses of the case, the plaintiffs and defendants hire expert witnesses with similar experiences and training in order to analyze the medical records and determine whether the health care provider's actions were within acceptable standards of practice.

TABLE 3

Traditional Informed Consent Components

- The medical problem necessitating a proposed medication, treatment, or procedure.
- The therapy's purpose, description, what is involved, and probable outcome.
- Likely benefits.
- Probable complications, temporary pain, or discomfort.
- Probable permanent results, disfigurement, disability, scarring, required care, and related medical costs.
- Known, anticipated, or foreseeable material risks including possible death.
- Alternative procedures and treatments and their known side effects, risks, and benefits, including no treatment at all.
- The consequences and rights of the patient to refuse or withdraw consent for any reason.

MALPRACTICE DEFENSES

Defenses are legal justifications to escape liability from lawsuits. The traditional defenses to negligent medication injuries are discussed in Table 2.

Another defense deserving mention is the "learned intermediary" doctrine. Under this doctrine, drug manufacturers fulfill their duty to warn consumers about the hazards associated with their products by warning physicians of known risks, side effects, and contraindications. With limited exceptions, the prescriber determines which warnings to advise the patient of during the informed consent process.

This doctrine implies that the manufacturer has accurately and completely informed the physician of all the risks associated with a particular drug. Some courts have refused to enforce the doctrine when the manufacturers' warnings to physicians were inadequate or defective. A warning may be defective if it did not disclose safety and efficacy data to the FDA that should have been included in the product labeling. The adequacy of the warning depends on what risks are included on the label, whether the warnings were conveyed to the physician in an appropriate manner under the circumstances, and whether the risks were downplayed during aggressive marketing campaigns.

INFORMED CONSENT

Prior to prescribing or administering new medications, as with all procedures or treatments, a health care provider must obtain the patient's informed consent. Informed consent in this context involves the disclosure of the material risks, benefits, and alternatives to a medication. The adequacy of this disclosure often forms the basis of informed consent litigation. Traditional informed consent components that need to be discussed with a patient are outlined in Table 3. Risks that usually need not be disclosed are those that are commonly known or remote unless the risk is deemed significant to the patient.

The majority of states use the "reasonable practitioner" standard to determine the degree of disclosure required. This standard requires a practitioner to disclose the information that most practitioners in similar circumstances would disclose. Most of the remaining states use the "reasonable patient" standard which requires the practitioner to disclose that information which a particular patient would want to know. The courts do not generally accept this particular standard, however, because it is too susceptible to manipulation.

The information in Table 4 can be used as a step-by-step guide for obtaining informed consent.

continued on page 16

CASE REVIEWS

In Harris County Hosp. Dist. v. Estrada, a medical resident prescribed Bactrim for a 73-year-old patient. The patient immediately had a reaction and died 16 days later. The patient's family sued the physician, the hospital, and the nursing, clerical and pharmacy staff. Prior to trial, the physician settled the claim against him for $230,000. At trial, it was learned that the defendants had relied on a computer generated Medication Administration Record (MAR) which listed "no allergies" for the patient. The plaintiffs were able to show that the defendants had failed to thoroughly review the patient's medical records for allergies or check the MARs for any inconsistencies. The court concluded that the defendant health care providers had failed their responsibilities to verify the appropriateness of the patient's prescriptions and to bring potential problems to the attention of the prescriber. The plaintiffs were awarded $350,000 in damages.

In Pellerin v. Humedicenters, Inc., a patient was admitted to a hospital's emergency department complaining of chest pain. Following an evaluation by a staff physician, an intramuscular injection of Demerol and Vistaril was administered in the patient's left hip. Subsequently, the patient sued when the site became irritated, painful, and red. At trial 10 years later, the defendant health care provider could not remember giving the injection. The patient's medical records indicated that the provider had signed the medication administration sheet, but failed to document the time, location, or the injection technique. This lack of documentation allowed the jury to conclude that the injection had been administered improperly. The patient was awarded $90,000 in damages.

These cases illustrate that standards of practice for medication administration require health care providers to thoroughly assess the appropriateness of the proposed medication and to thoroughly document administration. In the first case, the failure of the defendant health care providers to assess for allergies caused the wrongful death of the patient and resulted in a subsequent award to the surviving family members. In the second case, the failure of the provider to document the time, location, and injection technique led to a large award for the patient's injuries.

> Improving health care while reducing medication errors, attendant expenses, and subsequent liability requires an extensive knowledge of medications and due diligence in prescribing, dispensing, and administering medications. Legally, health care providers are responsible for understanding the medications they prescribe, dispense, and administer.

TABLE 4

Checklist for Obtaining Informed Consent

- ✓ Use words, phrases, and language the patient understands.
- ✓ Completely document all discussions in the medical record, because these records may be used as evidence at trial. Documentation should include:
  - ✓ how much time was spent in the discussion;
  - ✓ what was discussed;
  - ✓ whether written information was provided.
- ✓ Provide opportunities for the patient to ask questions.
- ✓ Evaluate the patient's level of understanding by asking questions and using a check sheet to be maintained as a permanent part of the medical record.

TABLE 5

Patient Teaching

- Help patients familiarize themselves with the colors and shapes of all their medications so they can better identify unfamiliar medications.
- Encourage patients to question health care providers when in doubt.
- Urge patients to purchase a drug reference book for home use.
- Provide patients with Internet addresses of sites related to medications.
- Instruct patients to keep current written records listing their prescription and nonprescription medications, as well as any adverse reactions to individual medications and dyes used during diagnostic testing.
- Instruct patients to use one pharmacy, to ask for written information about each of their prescriptions, to review the information with their pharmacist, and to ensure that the pharmacist has a computerized list of all the patient's current medications, including over-the-counter drugs, as well as his or her allergies and medical conditions.

RISK MANAGEMENT: PREVENTION OF MEDICATION ERRORS

Computer-based patient safety systems are currently being used by several hospitals to reduce medication errors. However, researchers warn that computers are not error-free, but create their own unique mistakes. Some hospitals have reduced their error rates by eliminating drugs with similar names, by standardizing drug orders, and revamping the process for ordering, dispensing, administering, and monitoring drugs. Programming errors associated with computerized patient controlled analgesia (PCA) machines have been reduced by making user instructions short, clear, and easy to understand. Additional ways in which PCA-related errors could be reduced would include decreasing the rates of machines that are infusing narcotics, and by frequently monitoring vital signs, oxygen saturation, capillary refill, and patient responsiveness.

Some studies have shown that assigning pharmacists to patient care teams in medical intensive care units reduced medication prescription errors by 66 percent to 77 percent. In addition, the direct involvement of pharmacists can help prevent medication errors by assuring that adequate stock levels of drugs are maintained on patient care units, and that health care providers are ordering patient medications during regular pharmacy hours.

Certain individual medications, as well as certain classifications of medications, have been identified as having a higher potential for adverse drug reactions (ADRs). The classifications in which most errors occur are antimicrobials, cardiac, steroids, non-steroidal anti-inflammatory, and surgical medications. Common medications having a higher potential for ADRs include insulin, heparin, opiates, patient-controlled analgesia, and potassium chloride. It has been estimated that medication errors in hospitals can be reduced by 33 percent with respect to these medications alone.

Formulary management is also a strategy that can help prevent medication errors. It prevents medication errors by making all health care providers in a particular setting familiar with the medications in the institution's formulary. The more familiar the health care providers are with the medications, the less likely they are to make errors in medication administration.

Teaching patients about their medications also helps to prevent medication errors. Table 5 lists helpful hints to assist in teaching patients about their medications.

SUMMARY

Improving health care while reducing medication errors, attendant expenses, and subsequent liability requires an extensive knowledge of medications and due diligence in prescribing, dispensing, and administering medications. Legally, health care providers are responsible for understanding the medications they prescribe, dispense, and administer. They must know the dosage ranges, possible adverse effects, toxicity levels, indications, and contraindications. Moreover, the provider is responsible for clarifying incomplete or ambiguous orders, for following routine safeguard procedures, and for notifying the primary health care provider of potential problems. Good communication among all health team members, in addition to complete documentation, patient assessment, and patient education, are essential.

Currently, there is no nationwide mandatory requirement to report medication errors. However, they may be voluntarily reported to the Institute for Safe Medical Practices-United States Pharmacopeial Convention Medication Error Reporting Program at (800) 233-7767, and to the FDA MedWatch program at (800) FDA-1088.

Georgia A. Martin, JD, Ph.D., RN, MSN, BSN, CS-P is the owner of Legal Medical Advisory Services in Silver Spring, Md. She also represents nurses in licensure issues and is a consultant to the Department of Defense and Department of Veteran Affairs on medical malpractice issues. She received her law degree from the University of the District of Columbia School of Law and her Ph.D., MSN and BSN from the University of Southern Mississippi.

MADISONVILLE PHYSICIAN HONORED FOR COMMUNITY SERVICE by the UNIVERSITY OF LOUISVILLE

Dr. Bill Crump, a family physician who practices with the Trover Health System and serves as the associate dean for the UL Trover medical school campus in Madisonville, was awarded the 2009 faculty award for Community Engagement at an Oct. 20th awards ceremony in Louisville. The award recipient is selected by a UL interdisciplinary committee that represents the Schools of Arts and Sciences, Engineering, Nursing, Business, Public Health, Dentistry, Education, Social Work, Law, Music, Graduate Studies, and Medicine. It honors the faculty member in any school that best puts into practice the concept of service learning. Dr. Crump says, "The concept of service learning is not new, but there has been renewed interest recently by universities, and especially by the new millennial generation learners. While serving as volunteers, students not only learn invaluable lessons, but actually provide real services for those in need."

Dr. Crump's nomination cited his work with the Hopkins County Community Clinic, his leadership of a team that provides free school physicals for needy children in Mclean and Webster counties, and his work as the only provider of prenatal services in Caldwell County.

The Hopkins County Community Clinic serves the working low income uninsured of Hopkins and Webster counties, providing free medical care and access to free or very low cost medications. It began in 2004 as an initiative among the clinical medical students who move to Madisonville after their first two years in Louisville, completing all their rotations in the Trover Health System. Dr. Crump served as the clinic's first medical director, and currently directs the Thursday evening "Cardinal Clinic." Dr. Crump states, "Our 'Cardinal Clinic' is a great example of service learning. The students see the patients first, listen carefully to their needs, and work with our volunteer faculty physicians to get them what they need. It's also a marvelous example of community teamwork. Trover Health System covers much of the cost of limited lab and imaging and sponsors our primary fundraising effort each year. Physicians from across Hopkins and Webster County volunteer their time, and it's energizing for us to work with these motivated students."

The free school physicals effort goes under the name Preclinical Student Screening Teams (PSST), and each summer

provides about 80 free school physicals. Dr. Crump trains medical students who have just completed their first year to do the basic physical, and checks each child when the student is finished. Referrals are made as needed for hearing, vision, dental, or more complex medical problems discovered in the screenings. Premedical students from regional universities participate also, designing the patient education materials used. This is a partnership with the West Area Health Education Center (AHEC), which itself is a collaboration with the University of Louisville housed within the Trover Health System. Regional health departments and schools also support the screenings. Dr. Crump admits: "PSST is the most fun I've had in a professional setting. These bright-eyed beginner medical and premedical students do a great job, and when it comes to talking with 12-year-olds about good health habits and the dangers of drug use or early sexual activity, the kids listen to them because they're closer to their age."

The prenatal clinic in Princeton began in 1998 when Caldwell County Hospital closed their OB unit. Dr. Crump drives once a week and supervises the care provided in the Princeton Trover Clinic by the Trover Health System family medicine residents there. These physicians are medical school graduates who are completing a three-year training that results in Board certification in the specialty of family medicine. The availability of this clinic prevents the pregnant patient from having to drive up to an hour for each of the 12-14 prenatal visits needed during pregnancy. Advanced ultrasound and other testing, as well as delivery, occur at Regional Medical Center in Madisonville. A recent report from the Kentucky Institute of Medicine showed that residents of Caldwell County have some of the best maternity outcomes in the state, despite being at higher risk for almost every other health condition.

The significance that a UL faculty member in Madisonville received this award was not lost on Dr. Dan Martin, the liaison from the Education Division of the Trover Health System to the Trover Campus leadership and the health officer for Hopkins County. "It is truly remarkable that with all the resources and people in Louisville, UL would reach out beyond their geographic borders and honor one of our own with the only faculty award given this year for community engagement."

Congratulations Dr. Crump on both your work and your growing legacy. They are certainly in the best tradition of family medicine.

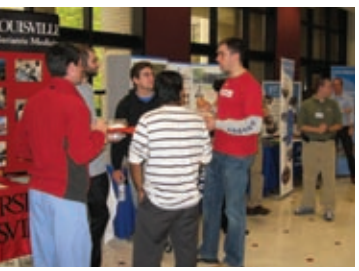
Dr. Crump's nomination cited his work with the Hopkins County Community Clinic, his leadership of a team that provides free school physicals for needy children in Mclean and Webster counties, and his work as the only provider of prenatal services in Caldwell County.

BY STEVE WHEELER, M.D.

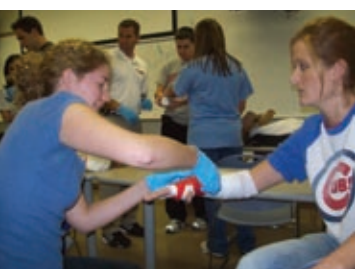
Senior Faculty for Resident Education
University of Louisville Department of Family and Geriatric Medicine

Update on Family Medicine Interest Groups at the University of Kentucky and University of Louisville

The Family Medicine Interest Groups (FMIGs) at the University of Kentucky and University of Louisville are alive, well, and powered by talented student members who are excited about family medicine as a calling and a career. With the need for primary care physicians rightly at the forefront of all the discussions about heath care reform, and the majority of Kentucky's counties sadly underserved by our current numbers and distribution of physicians, a review of these two groups, which encourage and nurture rising family medicine leaders, seems most appropriate. At the national level, the American Academy of Family Physician's "Virtual Family Medicine Interest Group" is excellent, and easily accessible at http://fmignet.aafp.org/online/fmig/index.html.



UL students discuss Family Medicine residencies at the October Residency Fair.



UL students practice casting and splinting at the FMIG workshop. It was both messy and fun!

University of Louisville School of Medicine FMIG

STUDENT LEADERS:
LaTasha Henry, President; Ashley Blaske, Vice President

FACULTY SPONSOR:
Steve Wheeler, M.D., Senior Faculty for Resident Education, Department of Family and Geriatric Medicine

MISSION:
To increase awareness of and interest in the specialty of Family Medicine. This we seek to accomplish by:

- providing information about careers available in the field of Family Medicine
- facilitating interaction and communication between students and Family Medicine faculty
- providing leadership opportunities
- providing members with the opportunity of getting involved both at the state level with the Kentucky Academy of Family Physicians (KAFP) and at the national level with the American Academy of Family Physicians (AAFP)
- providing mentors for student members

ACTIVITIES AND EVENTS:

Lunchtime presentations and evening workshops have included an overview of family medicine as a specialty, a family medicine resident panel discussing the transition from student to resident and life as a resident, a casting and splinting workshop (100 signed up for the 20 positions!), and a cardiac physiology and EKG correlation.

A resident mentoring network has been established in which students are "adopted" by interested residents for mentoring and to observe the science and art of family medicine.

Primary Care week in October was filled with events, including a Residency Fair for regional programs.

FUTURE DIRECTIONS:
An evening "Leadership Conference" is scheduled this semester for current MS-2 FMIG leaders (augmented by family medicine resident leaders) to begin preparing interested MS-1 students for outstanding leadership performance within the FMIG in 2010-11.

WEB SITE:
http://louisville.edu/medschool/medstudents/clubs/family-medicine

University of Kentucky College of Medicine FMIG

STUDENT LEADERS:
Marlena Mattingly, MS-3, and Kate Livesay, MS-2, Co-Presidents

FACULTY SPONSORS:
Michael R. King, M.D., Assistant Professor, Residency Program Director; Sarah Parrish, M.D., Assistant Professor, Department of Family and Community Medicine

MISSION:
To inspire interest and develop understanding of Family Medicine and Primary Care among medical students through advocacy, community service and leadership development.

ACTIVITIES AND EVENTS:
Sponsor regular ("we try to do them monthly") meetings that increase exposure to practicing family physicians, family medicine as a specialty, and issues in primary care. These are supplemented by early evening workshops exploring practical hands-on topics. Recent events have included a panel of chief residents from family medicine, Med-Peds, and internal medicine addressing the nuances of these primary care specialties, and workshops on dermatology, knee injections, and CXR interpretation.

On Primary Care Day in October, a residency fair was held, with more than 20 regional residency programs participating.

FUTURE DIRECTIONS:
Leaders hope to establish a scholarship program, using money generated by the residency fair, for international primary care trips to the Dominican Republic and Ecuador. Students actively involved in the FMIG could apply for these funds.

WEB SITE:
http://www.mc.uky.edu/familymedicine/predoc/predoc_interest_group.htm

DR. ELLSWORTH SEELEY
Receives UK Honorary Alumni Award

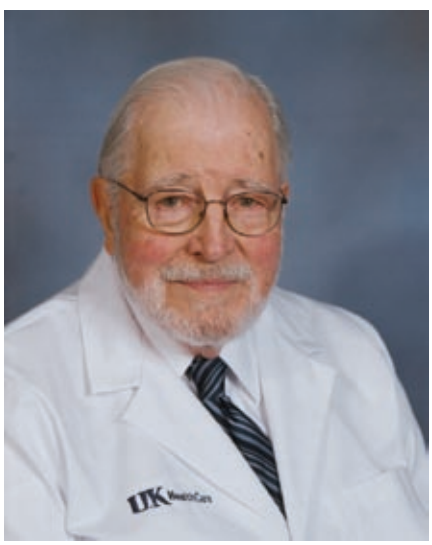
Dr. Seeley's lifetime of service, learning, and teaching has had a tremendous impact on the well-being of patients and the practice of medicine, in the Commonwealth, the region, and the nation.

Dr. Ellsworth Seeley was the recipient of the University of Kentucky Medical Alumni Association's Honorary Alumnus Award. This award honors individuals who have exemplified a dedication to medical education and residency/fellowship training, and served as models of physician responsibility to patients, colleagues and community members, leaving a legacy at the University of Kentucky College of Medicine. Dr. Seeley, who lives in Lexington, was presented with his award at a reception on Friday, Oct. 16, at Spindletop Hall in Lexington.

Dr. Seeley earned his medical degree from the University of Louisville and completed a rotating internship at Duval Medical Center in Jacksonville, Fla. He joined UK's faculty in 1975 after spending 25 years in private practice. Dr. Seeley served as program director, vice chairman and clinic director prior to his retirement from the Department of Family and Community Medicine. In these positions, he taught medical students many skills relating to "bed-side" manner and practice management. Since his retirement, he continues to give back to the college by serving on the admissions committee and precepting in the Department of Family and Community Medicine.

Dr. Seeley is a past president of the Kentucky Academy of Family Physicians and charter diplomate of the American Board of Family Medicine. He was honored by UK College of Medicine's 1990 graduating residents by the creation of an award in his honor which is given to the best resident teacher, the E.C. Seeley Resident Teacher of the Year Award. In 2009, Seeley was recognized by the Kentucky Academy of Family Physicians as recipient of the Distinguished Service Award. He also was recognized as Part Time Teacher of the Year by the American Academy of Family Physicians and received the Abraham Flexner Outstanding Teacher award in the areas of leadership and administration; teaching, educational innovation and curriculum development; and faculty development.

From left to right: Dr. Rankin, UK Alumni Association president, Dr. Perman, UK College of Medicine dean, and Dr. Seeley, award recipient.



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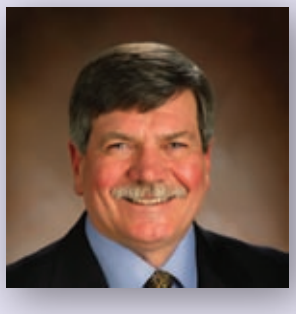

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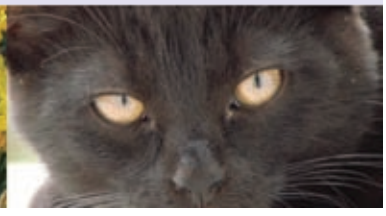

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