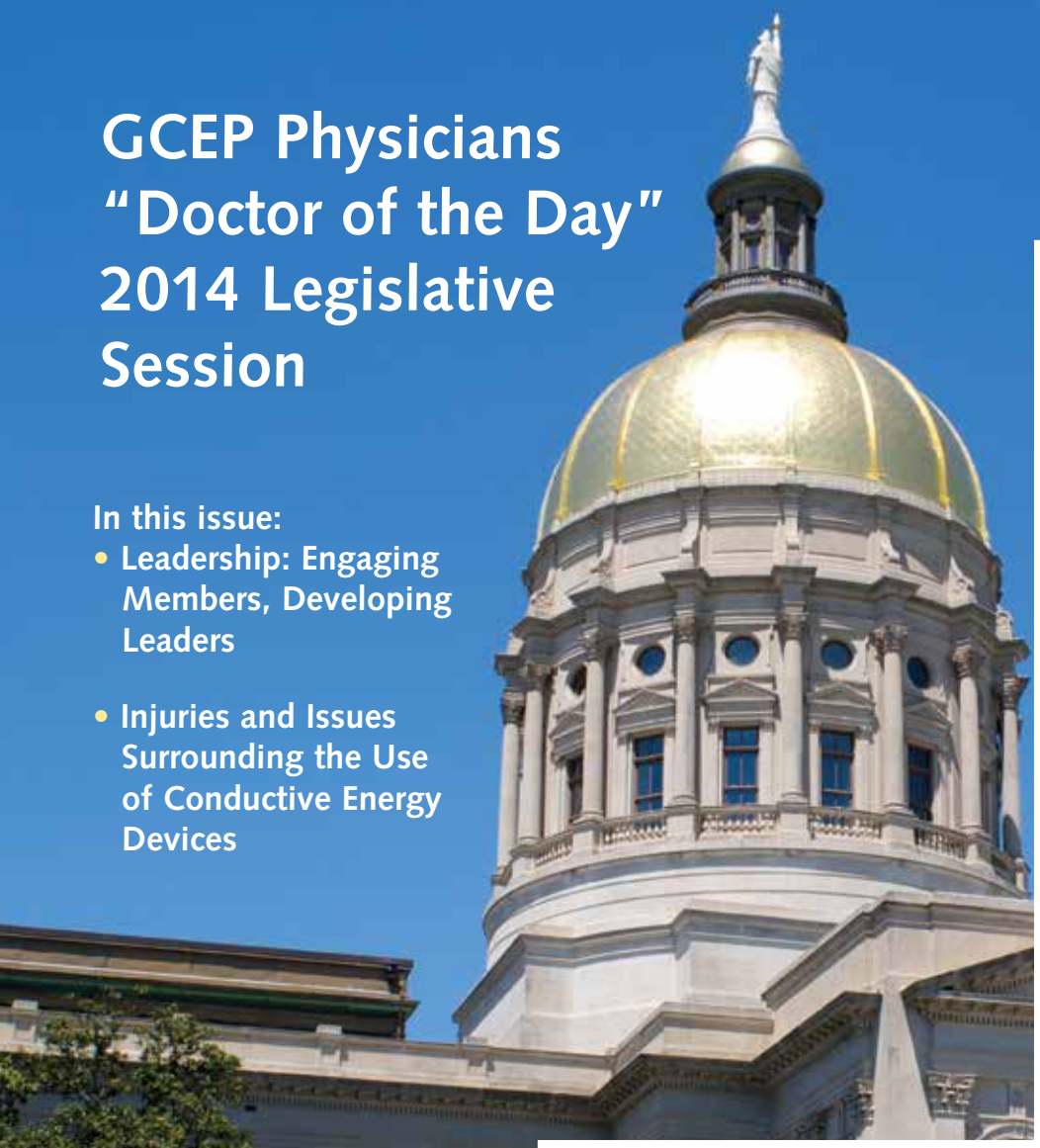
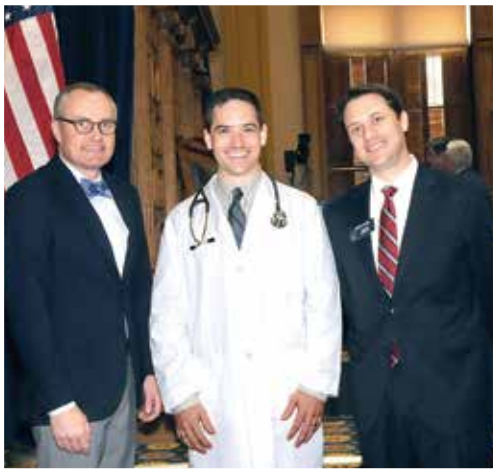
EPIC

The Magazine of the
Georgia College of
Emergency Physicians

SUMMER 2014

GCEP Physicians "Doctor of the Day" 2014 Legislative Session





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- Leadership: Engaging Members, Developing Leaders
- Injuries and Issues Surrounding the Use of Conductive Energy Devices

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On the Cover: GCEP physicians volunteer to spend a day during the legislative session working in the Capitol's medical aid station, where they tend to illnesses and injuries of all kinds. Top, middle: Jay Smith, MD; middle, middle: Sean Lowe, MD; and bottom right, middle: Matt Keadey, MD and bottom left, middle: Rich Lassiter, MD.

We welcome your comments or suggestions for future articles. Call or write at:

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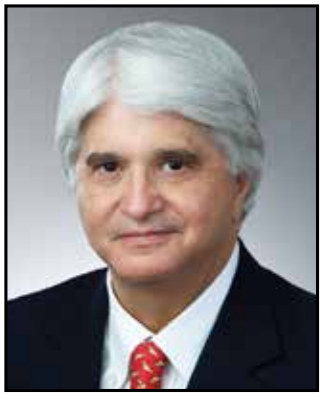
Every Doctor is a Leader – The GCEP Leadership Initiative

John J. Rogers, MD, CPE, FACS, FACEP



John J. Rogers, MD, FACEP
jrogers@acep.org

Dr. Rogers is president of GCEP.

Like it or not, every one of us is a leader. Physicians traditionally are looked upon as having unique knowledge, skill, judgment, and wisdom. We have chosen a career that places the interests of others above themselves. Together these make us natural leaders in the eyes of those around us.

At home, if we have children, they will naturally look to us for leadership. At work, our patients look to us for advice, guidance and help in leading them down the path to wellness. The other members of our EM team, advanced practice providers, nurses, and others look to us for leadership and direction as well. Increasingly hospital administrators look to us for leadership, as do other members of the medical staff. Many of us have leadership positions outside of the home or work, on local school boards, civic associations, and churches.

Yet many of us find ourselves ill prepared as leaders. However leadership skills can be learned and developed. Recognizing our natural role as leaders, and that we as a Chapter need to develop our own leaders, GCEP has initiated several projects that will address the need for leadership education and provide opportunities to participate, develop, and exercise leadership skills. Together they form what I will call the GCEP Leadership Initiative.

Dr. John Sy, a GCEP Board member from Savannah, has developed the GCEP Leadership Fellowship. Our first class will begin their yearlong program this June. It will consist of discussions on leadership skills, elements of bad and good leadership, media training, advocacy training and participation in GCEP Board meetings and advocacy events.

Through the efforts of Dr. Bob Risch and Dr. Rob Higgins, GCEP began its Leaders and Directors Conference a few years ago. This is held every December and has become very popular. It provides presentations pertinent to management of an ED, as well as issues important to emergency medicine. It has attracted national speakers and is becoming known as a first class conference regionally and nationally.

This year, at the Leaders and Directors Conference, we will begin the GCEP Awards Program. GCEP will award members in different categories for their leadership and accomplishments. This is not only to recognize individuals for their outstanding contributions and performance, but also to serve them as examples to others of what can be achieved through excellence in leadership. Award categories and the nomination process will be announced at our Annual Membership meeting and then be available on our website as well.

This past year we began formal Committees with membership involvement. Though currently led by GCEP Board members it is our hope that eventually members will rise to assume the role of Chairs of each of these. Committee appointments for 2014-2015 will be announced during the Annual Membership meeting this June at the Coastal Emergency Medicine Conference on Kiawah Island. Committee interest forms will be due by the end of May and can be found on the GCEP website.

Our Committees and their general duties are:

1. Bylaws – Review and update GCEP Bylaws on a bi-annual basis. Develop and then annually update a GCEP Chapter Manual. Perform a legal audit of GCEP bi-annually. Report annually to the membership.
2. Education & Research – Arrange and direct the Directors and Leaders Conference and the GCEP component of the Coastal Emergency Medicine Conference. Promote the GCEP Regional meetings and advise the GCEP Board on other educational offerings to meet member needs.
3. Electronic Media – Keep up with current trends in social media, explore best outreach methods to engage membership, monitor the GCEP website and update content as needed.
4. Membership – Grow membership to 801 by June 30, 2015, develop strategies for recruitment and retention, develop the EM Futures program, assess member needs on a bi-annual basis, and report annually to the membership.
5. Finance – Formulate a budget, manage our investments, advise the GCEP BOD on opportunities to save on expenses or increase revenue, and review all contracts.
6. Governmental Affairs – Monitoring legislation/regulation that may impact emergency medicine, organize and improve our advocacy efforts, improve our Legislative Day activities; provide routine updates to our members, work with GEMPAC to identify legislators who deserve our support, and work with GEMPAC to identify our legislative priorities.

GCEP needs leaders, will need them in the future, and we as a College have an obligation to develop our future. There is no doubt that in the future emergency physicians will be increasingly called upon to fulfill leadership roles in their hospitals and on their medical staff. And when the call comes for us to lead, it is our duty to assume them and be capable of meeting these obligations. Participation in the activities that compose the GCEP Leadership Initiative can be a way to begin to prepare for the inevitable calls to lead.

The Department of Public Health would like to introduce to you **GEORGIA RESPONDS!**

Georgia Responds is the organization representing Georgia's health and medical volunteer programs with an easy streamlined registration process.

Click. Connect . Respond.

Click to learn how you can help before and after disasters or health emergencies as well as volunteering with the less fortunate in your own community. Some volunteers provide licensed medical services and administrative support, while others lend their special talents or skills as interpreters, community planners, computer experts and more.

Connect to a simple one step registration portal that's never been easier for one, or for all, of Georgia's health and medical volunteer programs. Georgia Responds puts programs such as the Georgia Volunteer Health Care Program (GVHCP), the State Emergency Registry of Volunteers in Georgia (SERVGA) and the Medical Reserve Corps (MRC) at your fingertips at www.GeorgiaResponds.org.

Care for others by making a difference when the unthinkable happens, or impacts everyday lives by volunteering medical and dental care. Gain career enhancing experience and, if you're eligible, stay current with valuable continuing education credits, free training, and sovereign immunity during your service.

Financial Ramifications for Physician Practices of ACA Deductibles: Getting Paid for "Affordable Care"

Kevin S. Little, PC

Absent in the noisy political rhetoric for and against The Patient Protection and Affordable Care Act (ACA), popularly known as "Obamacare," is analysis of the potential financial impact of the ACA's significantly high deductibles upon physician practices. In a third-party payer system where consumers are inclined to think that if covered by insurance the doctor's bill is paid by the insurer, adapting to high ACA deductibles may be painful for patients and treating doctors alike.

The New Day: Shifting Health Care Costs From Payer to Patient

Laudable objectives of the ACA include slowing the growth of health care costs, improving quality of health care and, perhaps the law's hallmark feature, expanding health insurance to cover to everyone. Proponents of the ACA tout new "access" to health care by way of health insurance coverage for all, irrespective of pre-existing health conditions. This policy objective is advanced in part by the ACA's play-or-pay mandates. So insurers are not left insure only high-cost patients, the ACA mandates that everyone (including, notably, the young and healthy) to obtain coverage and pay insurance premiums if not covered under an employer or government insurance plan. The alternative – a penalty tax to the government – is intended to incentivize a decision to pay insurance premiums. To avoid wide-spread abandonment by businesses of employer-sponsored health insurance based on the new costs of providing health insurance with "essential benefits" required by the ACA, employers with 50 or more employees that decide against offering ACA health insurance coverage must pay significant penalty taxes to the government.

Even with the government's much publicized website problems, multiple delays in implementing certain ACA provisions and ongoing political wrangling about whether the ACA is good or bad, millions of Americans have already enrolled via the ACA's Health Insurance Exchange in and are now covered by ACA health insurance plans. Millions more will. In an industry where medical practice models heavily depend upon third-party payer revenue, more insured patients should be all good for doctors – right?

The economic reality is that there is no free lunch for those insured under the ACA and this reality will impact physician practices. The significant new costs of insuring greater risks (pre-existing health conditions, no life time limits or annual caps, required essential benefits, etc.) of course must be passed on to consumers. One way insured individuals and families will shoulder the increased costs is by high deductibles. The ACA strongly advances an existing trend toward high deductible insurance plans. It authorizes deductibles of up to $6,350 for an individual and $12,700 for a family. The ACA's online marketplace, www.healthcare.gov, presents bronze, silver, gold or platinum plan options, which, in addition to some differences in benefits, involves choice of higher premiums or higher deductibles. Due to the impression conveyed by the ACA that all plans now must include "essential" health benefits, many consumers are expected to shop based on premium alone. To avoid higher premiums, consumers are expected to gravitate toward the higher deductible bronze plans.

The average individual deductible for the lower-priced bronze plans is $5,081 a year for an individual, which is 42 percent higher than the average deductible for an individually purchased plan last year ($3,589). While limited preventive care

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Kevin Little is a 22-year business and healthcare lawyer who advises and represents healthcare providers with regard to third-party payer contracting and disputes, business set up and transactions, regulatory compliance and payer audits, fraud investigations and high stakes litigation.

is exempt from the ACA deductibles, most treatment is not. Absent very significant cumulative or big-ticket medical expense (rare for most patients), the typical patient insured by an ACA bronze plan will pay out-of-pocket most or all of his or her annual health care costs.

Doctors and their insured patients are accustomed to the usual mechanics of our third-party-payer system, involving presentation of an insurance card to the doctor's receptionist, small co-pays, submission of a claim to an insurer and an insurer's payment. Patients are not used to paying the full costs of their health care, especially if they write checks (or have deductions from their pay) for insurance premiums. And physician practices are set up to depend upon claim processing and payment by third party payers, with limited patient billing only after claims are processed by the insurer.

This model is not well suited to high deductible insurance plans, however. No one likes a surprise bill, especially for medical tests or procedures a patient thought the insurer might pay. Payment of an unexpected doctor bill received weeks after treatment has been obtained can easily be relegated in priority behind the more pressing car payment, cable bill, or cell phone bill, and may be delayed or avoided altogether as a result.

So what should physician practices do?

Get Paid Upfront

This strategy seems obvious for any business. However, payment up front is not as straightforward a proposition for physicians as it is for a plumber, grocery store, or lawyer, at least where insured patients are involved. Physicians are subject to provider agreements with third party payers that dictate what charges are "allowed," irrespective of what the doctor may otherwise charge. As a matter of well-established routine in physician practices, insurer processing of claims reveals the "allowed" amounts for a health care provider's charges. So, where deductibles are so high that the insurer's role is mostly a moot point yet the provider agreement nonetheless binds the doctor to collect only what is "allowed," how can the doctor determine and collect the proper amount from the patient at the time of service?

The allowed amounts are stated in the third party payer's fee schedule. The payer's fee schedule is part of its provider agreement with the doctor or medical practice and, if not attached to the contract, should be obtainable by a request to the payer. Because physicians are contractually bound to charge only an "allowed amount" stated in the fee schedule for a particular service, the allowed amount is what can be collected from the insured patient at the time services are rendered.

For many physician practices, important adjustments to office procedures can facilitate collecting full payment of the allowed amount for charges directly from high deductible patients at the time of service. Trusted office personnel may be delegated to obtain, save and carefully organize on an ongoing basis all payer fee schedules so that allowed amounts for anticipated services can be determined before services are rendered. Front-of-the-office intake functions could include a determination that a deductible has or has not been met, preferably before the patient arrives. If a deductible has not been met, requiring full payment of the allowed amount of all charges for the anticipated service will avoid the risk of delayed or no payment for the services rendered.

Educate Patients

Part of the challenge for physician practices in trying to obtain full payment by insured patients at the time of service will involve training patient expectations. Physician practices will benefit from educating insured patients with high ACA deductibles in advance of their doctor's appointment about the payment expectations of the doctor. Advance communication of payment responsibilities will allow patients to plan and make payment necessary arrangements, which will reduce the likelihood of unpleasant misunderstandings where high deductibles have not been met. Getting in front of payment issues that will stem from higher deductible health insurance plans in this way should help contain any increase in receivables or uncollectible patient accounts that might otherwise attend the new high deductible insurance plans.

Disclaimer: Thoughts shared here do not constitute legal advice.

From the President Elect

Legislative Week at the Georgia Capitol

Matt Lyon, MD, FACEP

Educating is one of the most important functions of our job as emergency physicians whether it is a patient, nurse, student, resident or legislator. That is right. One of our most important responsibilities is educating legislators on the issues that we as emergency physicians face as well as issues that patients face when seeking emergency care.

What are the issues? As can be found in the ACEP National Report Card, Georgia ranks 46th (grade F) for access to emergency care, 32nd for disaster preparedness (D+), 31st on public health (D+) and 26th for quality and patient safety environment (C). Further, we all know that psychiatric care in Georgia is a major concern, if not a broken system. Unless we are engaged with our Senators and Representatives in the state legislature, these issues will not be highlighted. During the week of February 17-21, physicians from GCEP worked to highlight these issues and others to the legislature. From all reports, Legislative Week was a success this year, allowing for adequate voice for our physicians, patients and issues in Emergency Medicine.

I am very grateful for all the physicians who participated in the Legislative Week activities, particularly the residents from Georgia Regents University and Emory University who helped with Doctor of the Day and the legislative booth. We plan on continuing this format for our legislative activities again next year. We invite all GCEP members to participate.

Update on Issues of the 2014 Legislative Session

SB141 – "Patient Injury Act" – Summary: this bill would revise the current medical malpractice system into an administrative compensation system similar, but not identical, to workers compensation for the payment of medical malpractice claims. The Medical Association of Georgia as well as GCEP have voiced opposition to this bill. Status – Did not pass. This will likely resurface next legislative session.

HB885 – "Medical Cannabis" – This bill would legalize cannabis oil that is high in cannabidiol (CBC) for medical use. CBC oil has proven successful in treating uncontrolled seizures and is very low in THC, the psychoactive ingredient in cannabis. Status – Did not pass. The Governor has asked Georgia Regents University to possibly become a study site for the medication. The state has begun an approval process with the FDA to allow for this study to occur.

Future Conferences

- GCEP Medical Directors Conference December 9-10, Lake Oconee, GA.

Matt Lyon, MD, FACEP
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Dr. Lyon is a Professor of Emergency Medicine at Georgia Regents University. He serves a Vice Chairman for Academic Programs, the Director of the Section of Emergency and Clinical Ultrasound and Director of the Emergency Ultrasound Fellowship. He is currently President-Elect for GCEP and Chairman of the Georgia Emergency Medicine Political Action Committee.

Engaging Members, Developing Leaders

John Sy, DO, MS, FACEP

John Sy, DO, MS, FACEP
John.Sy@gcep.org

Dr. Sy is GLAF program director, chair of membership committee and a member of GCEP Board of Directors. Dr. Sy is attending physician, Emergency Medicine; assistant professor, Mercer University; Memorial University Medical Center in Savannah.

Beginning this June at the Annual Tri-State Coastal Emergency Medicine Conference at Kiawah Island, South Carolina, we will start the first yearlong GCEP Leadership and Advocacy Fellowship. The initial fellowship class will consist of Mark Griffiths, MD from Atlanta and Matt Astin, MD, MPH from Macon.

Emergency Medicine Futures is part of Georgia College of Emergency Physicians' Leadership Initiative. EM Futures consist of four core components:

1. Medical Student Initiative
2. Residency Visit Program
3. Leadership and Advocacy Fellowship
4. Georgia Mentorship Program

As plainly evident in the four core components, EM Futures attempts to capture and engage Emergency Physicians in all phases of their career including medical education, graduate training, and the practice of Emergency Medicine. GCEP members throughout the state have made visits, given presentations, and participated in panel discussions at all of the allopathic and osteopathic medical school Emergency Medicine Interest Groups in Georgia. The engagement of medical students interested in Emergency Medicine and EM residents is vital to the success of GCEP's Leadership initiative and the future of the College. The continued growth and maturation of the Leadership and Advocacy Fellowship will blend into the Georgia Mentorship Program. In time, senior residents and recent graduates will be linked with practicing Emergency Physicians in their region. The mentorship program is ultimately the backbone of EM Futures because this program engages Emergency Medicine leaders with medical students, residents, and young physicians.

The Georgia College of Emergency Physicians Leadership and Advocacy Fellowship (GLAF) was created as part of EM Futures to mentor young leaders in emergency medicine. GLAF provides an orientation to organized emergency medicine and facilitates leadership development via guided experiences at state meetings, national meetings, and conferences. Georgia fellows are expected to assume leadership roles in multiple aspects of emergency medicine, and continue to be valuable members of GCEP and ACEP. The goals of the program are as follows:

1. Identify individuals with the potential to become leaders in emergency medicine.
2. Provide orientation and skills to allow potential leaders to promote emergency medicine locally and nationally.
3. Facilitate the promotion of fellowship graduates into leadership positions both locally and nationally.

The Leadership and Advocacy Fellowship is designed for practicing physicians in Georgia. Requirements include taking part in roughly six to eight meetings a year and participating in various committees. For detailed expectation of fellows, please contact John Rogers at John.Rogers@gcep.org or John Sy at John.Sy@gcep.org for further information.

Dr. Matt Astin is the Clinical Assistant Professor of EM and IM at Medical Center of Central Georgia, Mercer University School of Medicine. He attended medical school at Mercer University in Macon, Georgia before completing an Emergency Medicine/ Internal Medicine residency at East Carolina University. He is back home in Macon, teaching medical students and the occasional off-service resident. Matt is the medical director for the ED observation unit, serves as the department liaison to trauma, and serve as a ward attending for the Internal Medicine residency.

Dr. Mark Griffiths attained his medical degree from the University of Cincinnati College of Medicine, Cincinnati, OH. Mark did his residency in Pediatrics at Cincinnati Children's Hospital Medical Center, Cincinnati, OH. His fellowship in Pediatric Emergency Medicine is at Emory University, Atlanta, GA.

ACEP Candidates for Office and ACEP Awards

For President Elect the candidates are:

Jay Kaplan MD, FACEP (California)
Robert O'Conner MD, FACEP (Virginia)
Rebecca Parker MD, FACEP (Illinois)

For Board of Directors:

Stephen Anderson MD, FACEP (Washington)
Jon Mark Hirshon MD, FACEP(Maryland)
Hans House MD, FACEP (Incumbent, Iowa)
Mark Mackey MD, FACEP (Incumbent, Illinois)
John Rogers MD, FACEP (Incumbent, Georgia)
Mark Rosenberg DO, FACEP (New Jersey)

Award Recipients:

Council Awards

Council Meritorious Service Award	Catherine Marco MD, FACEP
Horizon Award	Michael McCrea MD, FACEP
Curmudgeon Award	Larry BeDard MD, FACEP

College Awards

Wiegenstein Leadership Award	J. Brian Hancock MD, FACEP
James Mills Outstanding Contribution to Emergency Medicine Award	David Sklar, MD, FACEP
Outstanding Contribution in Education Award	William K. Mallon MD, FACEP
Outstanding Contribution in EMS Award	Marianne Gausche-Hill MD, FACEP
Outstanding Contribution in Research Award	Lance Becker MD, FACEP
Colin C. Rorrie Award for Excellence in Health Policy	Lynne Richardson MD, fACEP
John A. Rupke Legacy Award	Arlo Weltge MD, FACEP
Honorary Membership Award	Phyllis Edans CPA, CAE
Disaster Medical Services Award	Frederick Burkle Jr. MD, FACEP and Joseph Waeckerle MD , FACEP

New ACEP Fellows:

Joe W. Bateman, MD, FACEP	Ricardo Rafael Jimenez, MD, FACEP
Douglas Olson, MD, FACEP	Andrew Ross, MD, FACEP

Emergency Medicine Residency Update: Georgia Regents University

Richard Gordon, MD, FACEP, Assistant Residency Program Director

Richard Gordon, MD, FACEP
rigordon@gru.edu

Dr. Gordon is an emergency medicine physician and Residency Assistant Program Director at Georgia Health Sciences University in Augusta, GA.

Georgia Health Sciences University

With the change of season comes a new chapter for the Georgia Regents University Emergency Medicine Residency program. Match Day 2014 smiled on our program and the rewards of tireless efforts from our faculty, residents, and program coordinator were realized yet again. We were thrilled to learn of the seven civilian candidates who will be joining the six outstanding military candidates acquired through the Army match last fall. We look forward to each of them joining our team on July 1.

You may have noticed that the class of 2017 consists of 13 interns compared to 12 interns of recent years past. As the residency continues to expand onsite and offsite health care services, the decision was made to apply for a compliment increase. We are proud to report the ACGME has approved the request for 14 trainees per class. For the immediate future we will utilize 13 of those spots with plans to expand to 14 residents in the near future.

Georgia Regents University Emergency Medicine Class of 2017

Carissa Chalut
Rocky Vista University College of Osteopathic Medicine

Logan Dellinger, Lake Erie College of Osteopathic Medicine

Darrel Douglas, University of Arizona College of Medicine

Forrest Estes, Philadelphia College of Osteopathic Medicine

Cyril Fider, Wayne State University School of Medicine

Harold Hall
Medical College of Georgia at Georgia Regents University

Martin Iwanowski, Nova Southeastern University College of Osteopathic Medicine

Genevieve Mueller
Rocky Vista University College of Osteopathic Medicine

Merwin Severtson
West Virginia University School of Medicine

Mario Soto, East Tennessee State University James H. Quillen College of Medicine

LaShon Sturgis, Medical College of Georgia at Georgia Regents University

Priya Venugopal, Virginia Commonwealth University School of Medicine

Andrew White, Medical College of Georgia at Georgia Regents University

With the increase in resident complement I'm excited to report additional expansions at the residency leadership level as well. Starting July 2014 we welcome Dr. Daniel McCollum to the residency leadership team as the new Assistant Residency Director. He will be working alongside myself, Dr. Brad Reynolds and Dr. Stephen Shiver.

With all the talk of new residents and additions at the leadership level, I must not forget to point out that the classes of 2014, 2015, and 2016 continue to represent the residency in a model fashion. We have a tradition of spirited internal competition among our residents; with the release of the annual ABEM in-training exam scores, opportunities for competition abound. We are very proud of their performance each year. The particularly noteworthy individual performances include 16 residents scoring >90th percentile, three of whom scored > 99th percentile.

For this quarter we continue to have solid representation at various national and regional EM conferences and competitions. We were thrilled to have our Army senior residents, Drs. Charlie Moore, Steven Troncone, William Arnett, and Jennifer McCain attend the Transition to Military Practice Conference in Seattle, Washington this past March. Additionally, Drs. Caylyne DeGood, Dylan Arnold, and Clayton Carter will be attending the Society of Academic Emergency Medicine annual meeting. They also plan to represent our residency in the annual "Sonogames" ultrasound competition. The Sonogames competition is a battle royale on a national scale for ultrasound supremacy. Speaking of battle royale, in the battle for brains and brawn, Drs. Dylan Arnold, Daniel Reed, and Jason Barter competed in the annual MedWAR competition. The MedWAR competition is an outdoor adventure race with medical skill and knowledge stations throughout the course. Our residents made up three of the four members on the winning team, beating the closest competition by over 45 minutes. Last, but not least, the Coastal Emergency Medicine Conference at Kiawah Island is quickly approaching. Drs. Dylan Arnold, Joseph Williams, and Kane Curtis are looking forward to presenting some of their research at the conference research forum.

Stay connected with your alma mater via the department website, social media including Facebook, and by getting together at national conferences. We welcome any questions or comments you may have concerning our program. Janelle Davis, our Program Coordinator, may be reached at (706) 721-2613 or via email at redavis@gru.edu.

Emory Emergency Medicine Update

Phillip Shayne, MD, FACEP

Emory enjoyed another excellent Match with 21 residents who start this July. We continue to have wonderful diversity and are able to recruit from around the country. The Class of 2017 is half women, includes four who have some training overseas and one who is active military. July of 2014 will see the residency reach a record 63 residents over three years. They will continue to staff five Emergency Departments which include Grady, CHOA-Hughes Spaulding (Grady peds), Emory Midtown, Emory Main and the CHOA-Egleston ED.

We are delighted to have gained ACGME accreditation for our EMS fellowship, among the first in the country, and have recruited one of our own residents, Ibtihal Alattas, to be our first EMS fellow in the accredited program. Program directors Alex Isakov and Julio Lairet successfully completed the new ABEM requirements for subspecialization and both are now board certified in EMS Medicine! Also, the Emory Anesthesiology program has created a dedicated two-year pathway ABA-accredited fellowship and pathway for EM residents to obtain Critical Care Medicine board certification. Two of our graduating residents will be entering that program. The EMS and CCM fellowships join our other ACMGE accredited pathways in Medical Toxicology and Palliative Care.

In other exciting news, Emory University Hospital opened a new 30-bed state-of-the- art ED with all the modern amenities. This is a great improvement over the old, evolved space. And Grady has broken ground on a $78 million ED which will open in 2016 and remain the main training center for the residency program. The 2014 academic year promises to be exciting and special.

Phillip Shayne, MD, FACEP
pshayne@emory.edu

Dr. Phillip Shayne is Associate Professor, Residency Director and Vice Chair for Education at Emory University School of Medicine.

EMORY UNIVERSITY SCHOOL OF MEDICINE

Emory University Emergency Medicine Class of 2017

Jalal Abu Halimah, M.B.B.Ch.
Jazan University Faculty of Medicine

Abdulrahman Alahmari, M.B.,B.S.
University of Dammam College of Medicine

Maryam Arshad, M.B.,B.S. , King Edward Medical University

Breanne Bailey, M.B.Ch.B.
Trinity College Dublin School of Medicine

Christopher Bodle, M.D., Indiana University School of Medicine

Yalina Disla, M.D. , Icahn School of Medicine at Mount Sinai

Ian Dodson, M.D. , Tulane University School of Medicine

Akshay Ganju, M.D.
Washington University in St. Louis School of Medicine

Eric Hamm, M.D., University of Arizona College of Medicine

Marita Harris-Naddell, M.D., Morehouse School of Medicine

Renee Johnson, M.D.
University of North Carolina at Chapel Hill School of Medicine

Shikha Kapil, M.D.
Medical College of Georgia at Georgia Regents University

Joshua Kuhn, M.D.
Medical College of Georgia at Georgia Regents University

Olivia Minkhorst, M.D., Emory University School of Medicine

Akinyi Ragwar, M.D., University of North Carolina at Chapel Hill School of Medicine

Jose Rosa, M.D., Keck School of Medicine of the University of Southern California

Daniel Rutz, M.D., Emory University School of Medicine

Terry Singhapricha, M.D. , Duke University School of Medicine

June Tibaleka, M.D. , Duke University School of Medicine

Tamara Washington, M.D.
Howard University College of Medicine

Jeremy Whitley, M.D. , Emory University School of Medicine

GEMPAC

THANK YOU to the follow Emergency Physician Groups for their generous donations to GEMPAC during the 2013-2014 fiscal year:

Northside Emergency Associates, PC
Gainesville Emergency Medical Associates, PA
Georgia Emergency Physician Specialists
South Georgia Emergency Medicine Associates

And thank you to GCEP Member Dr. Angie Mattke who set up an automatic monthly donation via her online banking bill pay. We'd like to invite all GCEP members to consider doing the same!

Donate Online at www.gcep.org/gempac.php

MAG Protects Physicians, Patients During Legislative Session

The Medical Association of Georgia (MAG) maintained its role as the leading advocate for physicians and their patients in the state during a fast-paced legislative session in 2014, according to MAG President William E. Silver, M.D.

He says, "I am extremely proud that we were able to withstand every scope of practice attack while we worked to pass legislation to help provide Georgians in rural parts of the state with greater access to physicians."

Dr. Silver and MAG Executive Director Donald J. Palmisano Jr. both applauded MAG Government Relations Director Marcus Downs and his team – including Ryan Larosa and Liz Bullock – for their efforts.

Contact Downs at 678.303.9280 or mdowns@mag.org with any questions related to the 2014 state legislative session.

Dr. Silver says that, "They have been tireless and effective advocates for our member physicians during this year's legislative session."

Palmisano adds that, "We had a successful legislative session, and I'd like to thank Marcus and his team for their exceptional efforts to safeguard the medical profession and protect patients in Georgia."

Downs is disappointed that a bill by Rep. Allen Peake that would have expanded the state's law permitting the use of cannabidiol extract in strictly controlled research programs for patients who have cancer or glaucoma to patients who suffer from seizures did not pass.

He does, however, point out that, "We were able to help amend the state prescription drug monitoring program to allow the exchange of information between health care providers and law enforcement officials across state lines in order to reduce prescription drug abuse."

He is also quick to attribute MAG's success to a number of individual physicians and county medical and specialty societies in the state.

Downs concludes that, "We had a lot of help from a lot of people during this year's legislative session, and that's the key to any successful advocacy effort."

MAG tracked more than 400 bills during this year's legislative session. Gov. Nathan Deal will now determine the fate of the bills that passed.

While some of the legislation is still subject to a final administrative review, the following summary addresses the key bills that were related to MAG's legislative priorities for 2014...

MAG priority: Preserving physician autonomy

Rep. Wendell Willard (R-Sandy Springs) introduced a bill (H.B. 830) that would have codified the definition for surgery in the state. MAG's House of Delegates addressed this issue in 2013, so MAG and the Georgia Society of Ophthalmology were prepared to develop a definition for surgery had the bill advanced. MAG Position: Supported. Outcome: Did not pass.

Rep. Carl Rogers (R-Gainesville) introduced a "professional transparency" bill (H.B. 971) that would have required every health care professional in the state to wear a badge that includes their credentials and their official role (e.g., physician, PA, nurse) if they are interacting with a patient. MAG was the leading advocate for the bill. MAG Position: Supported. Outcome: Did not pass.

Sen. Chuck Hufstetler (R-Rome) introduced an "economic credentialing" bill (S.B. 360) that would have allowed individuals who are employed by one facility to have privileges at other medical facilities in order to address some concerns that are related to physician contracts and medical staff bylaws. MAG's policy is consistent with the bill's provisions. MAG Position: Supported. Outcome: Did not pass.

MAG priority: Protecting physician confidentiality

Rep. Tom Rice (R-Norcross) introduced a bill (H.B. 721) that would have allowed the Georgia Composite Medical Board to release information about physicians that is related to civil lawsuits. MAG Position: Opposed. Outcome: Did not pass.

MAG priority: Protecting physicians from liabilities

Rep. Ronnie Mabra (D-Atlanta) introduced a bill (H.B. 828) that would make it illegal to receive cash compensation for making referrals to attorneys or health care providers (i.e., "cappers or runners or steerers") who solicit referrals at the scene of an automobile accident. MAG Position: Supported (with MAG-endorsed amendments). Outcome: Passed.

Sen. Brandon Beach (R-Alpharetta) introduced the "Patient's Compensation Act" (S.B. 141) that would have replaced the state's medical malpractice system with an "administrative compensation system" that would establish independent medical review panels that would evaluate patient injury claims – as well as a board to oversee the system, which would be funded by physicians and other health care providers. MAG opposed the bill because 1) it would increase claims and costs and 2) it would repeal the remaining provisions of the tort reform bill (S.B. 3) that passed in Georgia in 2005 and 3) it would be ruled unconstitutional. MAG's Board of Directors voted to oppose the bill in 2013 and 2014. An identical version of the bill (H.B. 662) was also introduced by Rep. Mike Cheokas (R-Americus). MAG Position: Opposed. Outcome: Did not pass.

Sen. Josh McKoon (R-Columbus) and Sen. Willard introduced identical "e-discovery" bills (S.B. 354 and H.B. 643) that called for the state to evaluate new ways to exchange information that is related to lawsuits as parties prepare for litigation. MAG supported amendments that would have 1) reduced the burden of lawsuits on parties that aren't directly involved in a lawsuit (i.e., when a party is asked to produce a document for the purposes of legal discovery, a printed copy would be acceptable) and 2) required the requesting party to bear the costs associated with producing those documents (e.g., retrieval, production, conversion, formatting). MAG Position: Supported. Outcome: Did not pass.

Sen. William Ligon (R-Brunswick) introduced a bill (S.B. 186) that would have allowed paramedics to consult with physicians before they transport mentally ill patients to emergency facilities. MAG Position: Supported (with MAG-endorsed amendments). Outcome: Did not pass.

MAG priority: Reinforcing the patient-physician relationship

A bill (S.B. 94) by Sen. Fran Millar (R-Atlanta) would have given advanced practice registered nurses (APRNs) the authority to order radiographic images. MAG worked with the Georgia Radiology Society to oppose this bill given patient safety and cost concerns associated with unnecessary radiographic procedures. MAG Position: Opposed. Outcome: Did not pass.

Sen. Millar also introduced a bill (S.B. 128) that would allow marriage and family therapists to diagnose. Following an in-depth task force review and a number of stakeholder meetings in 2013, MAG's Board of Directors voted to oppose this measure during its meeting in January. Downs explains that, "The legislators who supported this bill decried it as a matter of equity, that diagnosing has always been within the scope of their practice charter, and that this legislation was necessary so they are paid for the services they render." MAG Position: Opposed. Outcome: Passed.

Sen. Hufstetler introduced a bill (S.B. 268) that would have allowed physician assistants (PAs) to prescribe Schedule II narcotics. MAG Position: Opposed. Outcome: Did not pass.

Sen. Dean Burke (R-Bainbridge) introduced a bill (S.B. 342) that would have required the Department of Public Health to inform health care providers of a patient's HIV status. MAG Position: Supported. Outcome: Passed.

MAG priority: Increasing access to care

Rep. Lee Hawkins (R-Gainesville) introduced a bill (H.B. 943) that would allow patients who take oral medications to receive the same kind of health insurance as those who receive chemotherapy drugs on an intravenous basis. The measure was amended to include the provisions of a bill (H.B. 707) that would 1) prohibit state agencies, departments or political subdivisions from using state resources to expand the Medicaid program in the state and 2) prohibit the state from running an insurance exchange and/or accepting federal funds for the purpose of creating or running a state insurance exchange and 3) prohibit the Georgia Commissioner of Insurance from investigating or enforcing any alleged violations related to the federal health insurance requirements that are mandated by the Patient Protection and Affordable Care Act. MAG ended up opposing the bill because of its policy to support legislation that would enable the state to receive federal funds to expand the Medicaid program as long as patients are allowed to use those funds to obtain private health insurance. MAG Position: Supported H.B. 943 in its original form but opposed the bill once it was amended with H.B. 707 provisions. Outcome: Passed.

Rep. Katie Dempsey (R-Rome) introduced a bill (H.B. 511) that would allow the State Health Benefit Plan to conduct a one-year pilot program for state employees to have bariatric surgery. The pilot would be used to develop the criteria to establish what's deemed "medically necessary" to determine who should qualify for the surgery. The pilot would be capped at 75 participants. MAG worked with the Georgia Society of the American College of Surgeons and Johnson & Johnson's pharmaceutical sector to support this bill. MAG Position: Supported. Outcome: Passed.

Rep. Allen Peake (R-Macon) introduced a bill (H.B. 885) that would have expanded the state's law permitting the use of cannabidiol extract in strictly controlled research programs for patients who have cancer or glaucoma to patients who suffer from seizures. The bill was 100 percent consistent with MAG policy. MAG stressed that it condemns the use of marijuana (e.g., THC) for general or recreational use throughout the legislative session. H.B. 885 was amended to require health insurance policies that are sold in the state to cover behavioral therapy for children six and under who are diagnosed with autism. MAG Position:

Supported the original bill. Outcome: Did not pass. (Note: The Atlanta Journal-Constitution has reported that Gov. Nathan Deal is exploring other options [e.g., an "executive order"] to enable Georgians to have access to the cannabidiol extract.)

Rep. Sharon Cooper (R-Marietta) introduced a bill (H.B. 965) that would provide immunity to any person who 1) seeks medical assistance for someone who is experiencing a drug overdose or 2) is experiencing a drug overdose and seeks medical assistance (i.e., they would not be arrested, charged, or prosecuted for a drug violation). MAG Position: Supported. Outcome: Passed.

Rep. Cooper also introduced the "Therapeutic Cannabidiol Research Act" (H.B. 1107) that would have established new standards for clinical trials to care for patients who are under the age of 21 who suffer from severe forms of epilepsy. MAG Position: Supported. Outcome: Did not pass.

Rep. David Stover (R-Newnan) introduced a bill (H.B. 853) that would have provided certificate of need (CON) exemptions for private mental health facilities. MAG policy calls for the repeal of CON. MAG Position: Supported. Outcome: Did not pass.

Rep. Trey Kelley (R-Cedartown) introduced a bill (H.B. 910) that would have allowed the Georgia Department of Community Health (DCH) to approve a "medical-legal partnership" – a program that is conducted or established by a non-profit entity through a collaboration pursuant to a written agreement between one or more medical service providers and one or more legal services programs, including those based within a law school, to provide legal services without charge to assist income-eligible individuals and their families in resolving legal matters or other needs that have an impact on the health of such individuals and families). MAG Position: Neutral. Outcome: Did not pass.

Rep. Matt Hatchett (R-Dublin) introduced a bill (H.B. 998) that would fund medical scholarships and loans for primary care physicians who practice in rural and underserved areas in the state as determined by the Georgia Composite Medical Board. The bill reads that, "For each year of practicing his or her profession in such board approved location, the applicant shall receive credit for the amount of the scholarship received during any one year in medical school." MAG Position: Supported. Outcome: Passed.

Sen. McKoon introduced a bill (S.B. 173) that would have established an objective standard to profile and measure physician performance and results – as well as an appeals process for physicians. MAG Position: Supported. Outcome: Did not pass.

Sen. David Lucas (D-Macon) introduced a bill (S.B. 338) that would have exempted emergency medical facilities from the state's Certificate of Need (CON) requirements. MAG has policy that supports legislative efforts to repeal the state's CON requirements. MAG Position: Supported. Outcome: Did not pass.

Sen. Don Balfour (R-Snellville) introduced a bill (S.B. 391) that would require every medical facility in the state to make a "good faith" effort to become certified by TRICARE (i.e., the U.S. military's health care program) – though those facilities would not be required to join the TRICARE network. The bill, which does not apply to ambulatory surgery centers, was amended to include the provisions of H.B. 922 – which would provide a tax deduction for certain medical clerkships as a way to get medical faculty in the state to serve as preceptors for young people who have an interest in a career in the health care field (e.g., prospective physicians, PAs, nurse practitioners). MAG Position: Supported. Outcome: Passed.

MAG priority: Preserving the "Medical Home"

S.B. 85 by Sen. Charlie Bethel (R-Dalton) and H.B. 1081 by Rep. Jason Shaw (R-Lakeland) were identical bills that would have allowed pharmacists to administer every vaccine under a blanket protocol (i.e., a patient could get any vaccine from any pharmacist without a physician's prescription). MAG believes the measures would have given pharmacists too much latitude and would have undermined the patient's primary care (i.e., their "medical home"). MAG has policy that calls for opposing legislation that contains this provision. MAG Position: Opposed. Outcome: Did not pass.

Prescription Drug Monitoring Program

Sen. Buddy Carter (R-Pooler) introduced a bill (S.B. 134) that would allow information from the Georgia Prescription Drug Monitoring Program to be shared across state lines. MAG opposed amendments to the bill that would have given pharmacists the authority to administer all vaccines to adults under a blanket protocol (i.e., the S.B. 85 provisions); MAG assumed a neutral position on the bill once that language was removed. MAG Position: Neutral. Outcome: Passed.

Budget

State lawmakers passed a $20.8 billion budget (H.B. 744) for the 2015 fiscal year that included several issues that will affect physicians, including…

A $6.8 million (combined) increase in operating grants for the Mercer University School of Medicine and the Morehouse University School of Medicine;

$2 million for the Georgia Board of Regents' "Health Professions Initiative" to fund residencies and address fund graduate medical education;

Nearly $641,000 for eight additional family medicine residency slots at the Gwinnett Medical Center (five) and the Houston Medical Center (three);

Nearly $500,000 to increase the amount of "Georgia Physician Workforce Board" residency grants by $333 per resident;

A $300,000 increase for "Area Health Education Centers" in the state for housing for medical students who are serving in six-week rural, primary care rotations;

$200,000 for 10 additional loan payment rewards for the Georgia Board of Physician Workforce's "Physicians for Rural Areas" program;

Nearly $32,000 for a new medical student capitation contract for five certified Georgia residencies at the Georgia Campus – Philadelphia College of Osteopathic Medicine; and

A little more than $115,000 for the Georgia Composite Medical Board to implement the pain management licensure program that was created during the legislative session in 2013

Hyperventilation Associated Electrolyte Abnormailities

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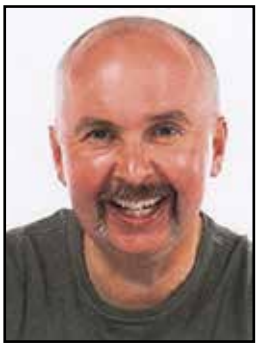

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Introduction

Hyperventilation is known to cause respiratory alkalosis. Due to the subsequent increase in pH, there are numerous downstream biochemical interactions that take place which can subsequently result in various acute electrolyte abnormalities which may be of clinical significance to the patient. Two cases presented in this article illustrate hyperventilation with associated acute electrolyte abnormalities and the associated clinical presentations.

Case 1: A 19-year-old female with a history of migraine headaches who presented to the emergency department for altered mental status. She was a nursing student under a lot of socioeconomic and academic stress and had reportedly ingested a handful of caffeine pills at school earlier in the day to help her focus on the completion of a project. She later developed a migraine headache and was taken home. When her father arrived home, he found her altered and combative with muscle spasms in her hands. Because she was unable to communicate, her father brought her to the hospital fearing a drug overdose.

On examination, the patient was cursing, disoriented and anxious appearing. Her responses to questions were inappropriate and consisted of reciting a list of random numbers. Vital signs were temperature 36.4 C, heart rate 104 beats/minute, respiratory rate 36 breaths/minute, blood pressure 124/87 mmHg, and her oxygen saturation on 2 liters per minute of oxygen by nasal cannula was 100%. She was unable to cooperate for a full neurologic exam and carpopedal spasm was noted in both hands. With the exception of tachycardia, tachypnea, and altered speech the remainder of the physical examination was unremarkable.

Electrocardiogram (EKG) revealed sinus tachycardia with no acute ST/T wave changes. Head CT demonstrated no acute intracranial process. Lab workup was significant for a pH of 7.6 on venous blood gas, phosphorus 1 mg/dL, potassium 4 mEq/dL, ionized calcium 4.3 mg/dL, and Lactic acid 5.2 mmol/L. The remainder of her labs including CBC, CMP, Tylenol, salicylates, ammonia, alcohol, and urine drug screen (UDS) were unremarkable.

The patient was treated with two liters of normal saline and 1 mg of intravenous lorazepam. Mental status subsequently improved, carpopedal spasm resolved, and her pH improved to 7.4 as measured with a venous blood gas. Lactate improved to 1.2 mmol/L, phosphorus improved to 1.9 mg/dL, and pH corrected ionized calcium improved to 4.6 mg/dL. The patient was admitted for 24 hour observation and discharged the following day. The explanation for the clinical presentation was that the caffeine pills resulted in palpitations and anxiety that was accompanied with hyperventilation and the subsequent altered mental status.

Case 2: A 28-year-old female presented to the emergency department for evaluation after having a near syncopal episode at work. She became overwhelmed with her work load and subsequently developed hyperventilation, palpitations, lightheadedness, and dizziness. She also reported tingling and cramping of both the hands and feet.

On examination the patient appeared anxious but was cooperative. Her vital signs were temperature 36.8 C, heart rate 97 beats/min, respiratory rate 18 breaths/min, blood pressure 157/84 mmHg, and oxygen saturation 98% on room air. Motor strength was 5/5 throughout with intact sensation and her reflexes were normal. There was no carpopedal spasm noted and her neurologic examination was otherwise non-focal. The remainder of physical exam was unremarkable.

Electrocardiogram revealed normal sinus rhythm with no acute ST/T segment changes. Laboratory testing was significant for a potassium of 4.6 mEq/dL and an ionized calcium of 3.9 mg/dL. The remainder of the basic metabolic panel (BMP) and urinalysis were unremarkable. The patient appeared stable enough that further labs such as a venous blood gas, magnesium, and phosphorous were not obtained.

After treatment with one liter of normal saline and 2 mg of oral Ativan, her anxiety, cramping, and tingling improved and her pH corrected ionized calcium improved to 4.7. No supplemental calcium was given. She was discharged home and returned to work the following day without incident. The rationale for the clinical presentation was that she had an anxiety attack which resulted in hyperventilation and in turn, the muscle cramping and tingling from hypocalcemia.

Discussion

Hyperventilation is a commonly encountered entity in both the pre-hospital and emergency department setting. The increase in expired carbon dioxide that results from hyperventilation subsequently causes respiratory alkalosis. This change in pH results in the downstream electrolyte abnormalities such as the hypocalcemia and hypophosphatemia observed in these two cases. It is also possible to see hypokalemia and hypomagnesemia in this setting as well.[1,2]

When pH increases, the reduction in available [H+] results in an increased negative charge on anionic buffers in the blood stream. Consequently, these negatively charged buffers, namely albumin, bind calcium and reduce the ionized calcium, thus resulting in symptoms such as carpopedal spasm and paresthesias. Hypocapnea, also known as hypocarbia, causes vasoconstriction which can result in paresthesias and a marked decrease in cerebral blood flow which can also lead to altered mental status. Hypocapnea also results in a shift of the oxygen-hemoglobin dissociation curve to the left, thereby impairing tissue oxygen delivery.[3] In the setting of concurrent muscle use, exercise, or exacerbation of panic disorder, significant lactic acid accumulation may develop.[4,5,6] Physical findings such as spasm in the muscles of mastication with tapping of the facial nerve (Chevostek's sign) and carpopedal spasm with upper extremity blood pressure cuff inflation (Trosseau's sign) can be noted but are neither sensitive nor specific.

In the setting of severe alkalosis, the increased negative charge of anionic buffers in the blood stream may cause a temporary shift of potassium and phosphate into the cell, thus resulting in hypokalemia and/or hypophosphatemia.[1,3] Hypophosphatemia may result in altered mental status but in the setting of severe respiratory alkalosis, the resultant decreased cerebral blood flow from hypocapnea could also result in altered mental status thus adding an additional layer of complexity to the clinical picture.

Both hypokalemia and hypocalcemia can have cardiovascular side effects including decreased contractility, refractory hypotension, and ventricular arrhythmias. EKG findings can include QT prolongation, T-wave flattening, and u-waves.[1,7] If noted, corrective action should be initiated to correct the underlying electrolyte derangement.

Treatment for hyperventilation consists of searching for the cause of the hyperventilation and treating it. Numerous causes for hyperventilation exist including anxiety, pain, and tissue hypoxia. Treating the root cause of the hyperventilation can result in an improvement of the resultant downstream electrolyte abnormalities as is evidenced in these cases. No electrolyte replacement was given in either of the cases presented here.

Breathing into a brown paper bag as a treatment for hyperventilation is discouraged. Rather, it is suggested that patients are placed on an oxygen facemask instead.

Hyperventilation: continues on page 15

Injuries and Issues Surrounding the Use of Conductive Energy Devices (TASERS)

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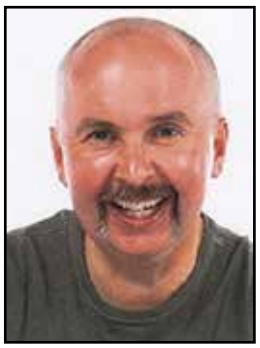

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Overview

Electronic Control Devices (ECDs), also known as Conductive Electrical Weapons (CEWs) have become increasingly popular among the law enforcement community for use as a less-lethal weapon to subdue otherwise potentially dangerous criminals. Nevertheless, there has been significant controversy regarding the potential lethality of these weapons. In this article, we will discuss the potential injuries associated with the use of these weapons as well as their potential lethality.

Figure 1: Impaled taser barbs

Background

The ECD most commonly used by the law enforcement community is the Model X26 manufactured by TASER International, hence why ECDs are commonly referred to as "Tasers" by the lay public. The Model X26 is shaped like a hand gun and can be used in one of two modes – "probe mode" or "touch stun mode." In "probe mode," two barbed electrodes deploy from the tip of the weapon which are attached to the weapon by insulated wires and deliver electrical impulses to the assailant. In "touch stun mode," the tip of the device is placed against the assailant and electrical impulses are delivered by two terminals on the tip of the weapon. The weapon is designed such that a single pull of the trigger delivers a five second burst of brief 100 microsecond electrical impulses at the rate of 19 pulses per second. The total amount of energy delivered in a five second burst is approximately seven Joules. The discharge can be terminated early by the operator or can be reactivated by subsequent re-pulling of the trigger. The device or the barbs do not have to be in direct contact with the skin in order to discharge electrical impulses. However, either both terminals of the tip of the device or both barbs do need to make contact with the patient in order to complete the electrical circuit, and in turn, deliver energy to the assailant.

There have been numerous applications of ECDs documented where no injury was sustained. Nevertheless, there are also a number of reported injuries as a result of the barbs, other trauma (i.e. falls secondary to electrical discharge) and the delivery of electrical current itself. These injuries will be discussed in depth in this article.

Discussion

With the use of ECDs becoming increasingly popular among the law enforcement community, awareness of the use of ECDs and their injuries has increased. There are a number of animal studies that have been done and there are a number of case reports of injuries after ECD discharge. Nevertheless, there remains a relative paucity of data on this subject in the literature, and a national registry is needed for the documentation of ECD discharges, patient injuries, treatments, and autopsy results, if applicable. This would help to more accurately risk stratify the use of these weapons.

As a weapon that fires projectiles, the injury patterns from the ECD barbs themselves are commensurate with what one would expect from any fired projectile. The ECD barbs are designed to impale superficially in the skin without puncturing into the thoracic or abdominal cavity; however, pneumothorax in a thin male from penetration of the thoracic cavity by a taser barb has been reported.[1] There have also been cases of traumatic globe perforation and intracranial perforation as well.[2,3,4]

Impaled taser barbs are easy to remove but should be treated as any foreign body. If it is suspected that the foreign body is impaled in a vascular structure that would result in profuse uncontrolled bleeding, it is best to defer for operative removal; otherwise, local infiltration with lidocaine, stabilization of the surrounding skin, and a quick outward thrust is generally sufficient to remove the taser barb.[5] If impaled very tightly in the skin, a small skin incision with a #11 scalpel blade will generally allow for easy removal.

There are a number of cases of trauma reported from the use of CEDs. When a CED is fired, it causes painful skeletal muscle contractions that temporarily incapacitate the assailant. As result, the assailant often falls to the ground upon discharge of the CED. There are numerous reports of minor injuries that are typically associated with ground level falls such as skin abrasions and lacerations, but there are also reports of fractures as well.[6] Avulsion fractures have been reported as well as thoracic spine compression fractures from powerful contractions of the paraspinal musculature in police officers who received an ECD discharge as part of training.[7] Rhabdomyolysis has been well documented, as has elevated myoglobin and lactic acid levels.[8,9,10] However the rhabdomyolysis was associated with other conditions capable of causing the elevated creatine kinase.[8,11] Elevated levels of cardiac biomarkers have not been reliably demonstrated.[10,12,13]

There have been a number of sudden cardiac death cases reported.[14,15,16,17,18] Extreme agitation, often in the setting of stimulant drug use and sometimes preexisting heart disease are often common factors and consistent with prior studies of restraint related fatalities.[19] The concept of "excited delirium" is frequently raised in articles that discuss sudden cardiac death after ECD discharge. The American Medical Association does not recognize the diagnosis of excited delirium as a medical or psychiatric condition, but it is recognized by the National Association of Medical Examiners.[16] To what degree the delirium, psychomotor agitation, hallucinations, drug intoxication, and hyperthermia associated with "excited delirium" may contribute to sudden cardiac death is unknown, but it is commonly associated with reported deaths.[19] It has been commonly speculated that a surge in adrenergic tone, hyperthermia, or acidosis may decrease the threshold for life-threatening rhythm disturbances. Underlying coronary disease, prolonged and repeated ECD discharges, and drug intoxications have been identified as risk factors for sudden death from ECD discharge.

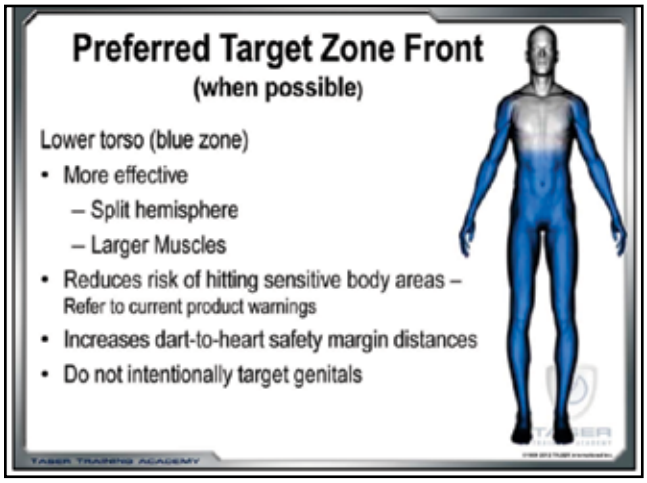

Figure 2: Preferred Target Zone Front

There have been multiple cases of VT/VF, asystole,[14,15,16,17,18,19] and even a case of atrial fibrillation in a 16-year-old requiring cardioversion following failed medical management with diltiazem.[20] Interrogation of an individual with a dual chambered pacemaker demonstrated ventricular myocardial capture at a rapid rate at the exact time the Taser struck the patient.[21] There are also multiple animal studies that show that ECDs induced ventricular fibrillation (VF) and ventricular tachycardia (VT) which suggest a causal relationship between ECD discharge and sudden cardiac death.[22,23] However, some of these studies used 40 second electrical discharges and electrical capture was demonstrated. While there probably remains some background level of controversy regarding the potential for ECDs to cause adverse cardiac events such as ventricular arrhythmias and sudden cardiac death, the consensus appears to be settling on agreement that ECDs can cause ventricular tachycardia or fibrillation and subsequent death.[15,16] Zipes based on his study of cardiac deaths unequivocally states that ECD stimulation results in cardiac electrical capture that provokes cardiac arrest due to ventricular tachycardia/ventricular fibrillation with asystole following prolonged ventricular tachycardia/ventricular fibrillation without resuscitation.[15,16] And, current Taser training recommendations now acknowledges the risk and recommends avoiding the anterior chest if at all possible.[24]

Dart-To-Heart Distance: Experts have identified the heart-to-dart distance and whether the probes traverse the heart (transcardiac) as being key determining fac-

tors in whether an ECD can affect the heart. The ventricular fibrillation (VF), ventricular tachycardia (VT), and cardiac capture or pacing probability for given dart locations decreased with the dart-to-heart horizontal distance (radius) on the skin surface. The further an ECD dart is away from the heart, the lower the risk of affecting the heart.[24,25,26,27]

Despite the list of possible injuries associated with ECD discharge, the vast majority of patients have only minor or no injuries. The position statement of the American Academy of Emergency Medicine states that routine EKG and lab studies are not required; rather, care should be focused to the injuries sustained or co-existing intoxications.

Conclusion

ECDs are becoming increasingly popular among law enforcement as a less lethal weapon of force but gains great attention from the community and the media. The most common injuries noted from ECD discharge are minor trauma from the ground level falls sustained as a result of their discharge and superficial skin wounds from the barbs themselves. The vast majority of patients who sustain an ECD discharge will have only mild or no injuries reported but some individuals will suffer from more serious penetrating injuries or cardiovascular collapse. The emergency physician needs to have a heightened awareness of ECDs and upon presentation of patient who has sustained an ECD discharge, is required to do nothing more than a thorough screening exam to evaluate for and document injuries. The individual circumstances of the case (i.e. number of shocks, duration of shocks, co-ingested substances, etc.) will determine whether screening labs, an EKG, or imaging needs to be obtained.

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Hyperventilation: from page 11

Breathing into a brown paper bag not only increases the amount of inspired CO2 but also decreases the amount of inspired O2. This has the potential to worsen the already ongoing process of tissue hypoxia that occurs from impaired oxygen tissue delivery. Breathing through an oxygen mask may have the same benefit of an increase in the amount of inspired CO2 but with less risk of tissue hypoxia.

The identification of electrolyte abnormalities in the acutely hyperventilating patient may cause the physician to react to the lab findings by ordering electrolyte replacement. Previous animal studies have demonstrated that it could take up to 1.5 times the duration of hyperventilation for electrolytes to return to baseline.[8] Keeping in mind that the electrolyte abnormalities seen in hyperventilation are secondary to intracellular shifts and protein binding, the total body concentration of the various electrolytes involved is not changed. It is therefore conceivable that the cardiovascularly and neurologically stable patient could be monitored without the initiation of electrolyte replacement; however, in the patient demonstrating signs of persistent altered mental status or direct cardiovascular consequence (i.e. hypotension, EKG changes, dysrhythmias), it would be prudent to initiate electrolyte replacement.

Conclusion

Hyperventilation causes electrolyte abnormalities that can have significant physiologic and clinical consequences. Treatment of the underlying cause of the hyperventilation will result in spontaneous improvement in the metabolic abnormalities seen; however, in the setting of neurological or cardiovascular consequences of acute electrolyte derangement, electrolyte replacement and correction should be considered to prevent further downstream consequences.

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Irregular Wide Complex Tachycardia

Stephen A. Shiver, MD, FACEP

You are working a typical shift and a patient presents to the ED complaining of palpitations. The nursing staff obtains an EKG and places the patient into a critical care room because his heart rate is high.

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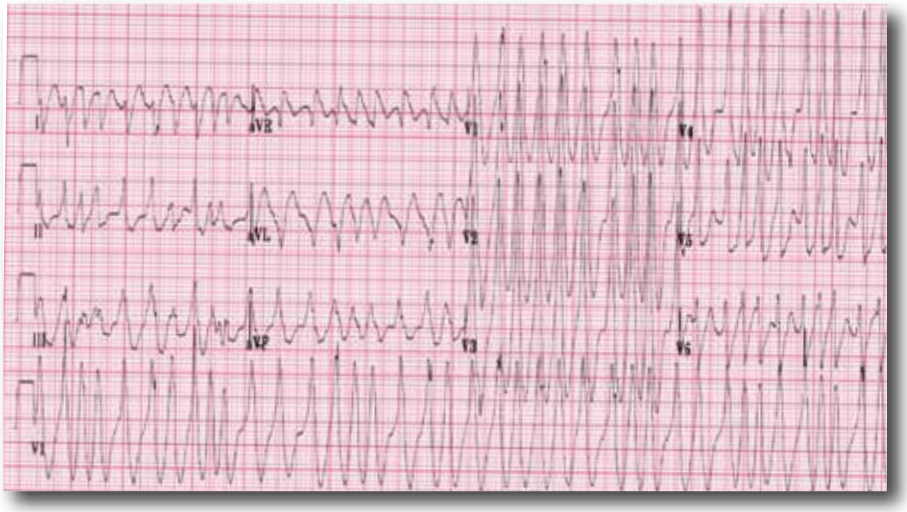
Discussion

Wide complex tachycardia has the potential to strike fear in the hearts of both EM residents in training and seasoned clinicians alike. We seem to see far more of the narrow complex tachycardias, so when a wide complex tachycardia shows up it can be a bit unnerving. We should get in the habit of grouping tachycardias in order to assist with differential and diagnosis. The following breakdown is quite useful: narrow complex regular, narrow complex irregular, wide complex regular, wide complex irregular. Looking at this patient's EKG, it's fairly easy to tell that it is an example of wide complex irregular tachycardia. The main items in this differential include atrial fibrillation with aberrancy (pre-existing bundle branch block, etc.), polymorphic ventricular tachycardia, and so-called pre-excited atrial fibrillation (atrial fibrillation in the setting of WPW).

Atrial fibrillation with aberrancy is the most common variant. There are several clues on the EKG that the rhythm is not in fact atrial fibrillation, however. A useful pearl is that the heart rate in atrial fibrillation rarely exceeds 180. Additionally, the QRS morphology in atrial fibrillation should not vary. Though irregular, there are clearly areas on the EKG where the rate far exceeds 180 and the QRS morphologies are clearly variable. Thus, the diagnosis is likely to be either polymorphic ventricular tachycardia or pre-excited atrial fibrillation.

It can be difficult to distinguish between the two above diagnoses. The good news is that it isn't critical to do so in the acute setting. If hemodynamically unstable, the answer is always electricity. If hemodynamically stable, the treating physician may consider antiarrhythmics. Note, however, that electricity would be very reasonable even in stable patients and a number of EM authorities prefer cardioversion over medical therapy. If medical therapy is chosen, the drug of choice would be procainamide.

It is critical to note that significant harm can be done to a patient with wide complex irregular tachycardia if the wrong medications are chosen. The administration of AV nodal blocking agents in this setting can be deadly. When given to a patient with pre-excited atrial fibrillation, AV nodal blocking agents (calcium channel blockers, beta blockers, adenosine, etc.) will delay conduction down the normal pathway thus favoring conduction down the accessory pathway. The accessory pathway facilitates very rapid conduction and the underlying rhythm can degenerate into ventricular fibrillation.



Example of Irregular Wide Complex Tachycardia

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Echo Made Easy: Part 2

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In the first part of this two part series, performance of a focused bedside ED echo was described. Here, life saving clinical applications of the focused bedside emergency department (ED) echo are discussed.

1. Tamponade (Effusion)

Pericardial fluid is easily detected as an anechoic (black) layer in the space around the heart. While tamponade is clinical diagnosis, the two components of tamponade physiology that are demonstrable on basic 2D echo are: (1) right-sided cardiac chamber collapse in diastole (trampoline sign), and (2) loss of IVC inspiratory collapse. The presence of a dilated inferior vena cava with less than 50 percent collapse on forced inspiration, or sniff, correlates with an elevated central venous pressure and confirms tamponade physiology. Additionally, a heart swinging in pericardial effusion with cardiac cycles is the ultrasonographic equivalent of EKG electrical alternans. In patients with chronic effusions, the pericardial sac has time to stretch in response to fluid and can sometimes contain a liter or more before tamponade occurs. With acute effusions, as little as 100 cc of fluid can cause tamponade.

2. Systolic Congestive Heart Failure (Ejection Fraction)

No quantitative ejection fraction measurement technique has been proven superior to qualitative visual "eyeballing." Another surrogate marker of ejection fraction is the excursion of the anterior mitral valve leaflet in diastole. The negative pressure created by a healthy heart in diastole augments atrial squeeze, pulling the anterior leaflet of the mitral valve towards the interventricular septum. Diastolic anterior mitral valve leaflet to septum distance determines the severity of LV dysfunction and ejection fraction. This calculation and dysfunction quantification, known as end-point septal to septal separation (EPSS). These calculations are obtained using M-mode (motion mode) ultrasound.

M-mode allows the study of focused regions of dynamic structures over time. To use this mode, press the M-mode button on the ultrasound machine. A cursor line will appear. Using the track pad/ball you can

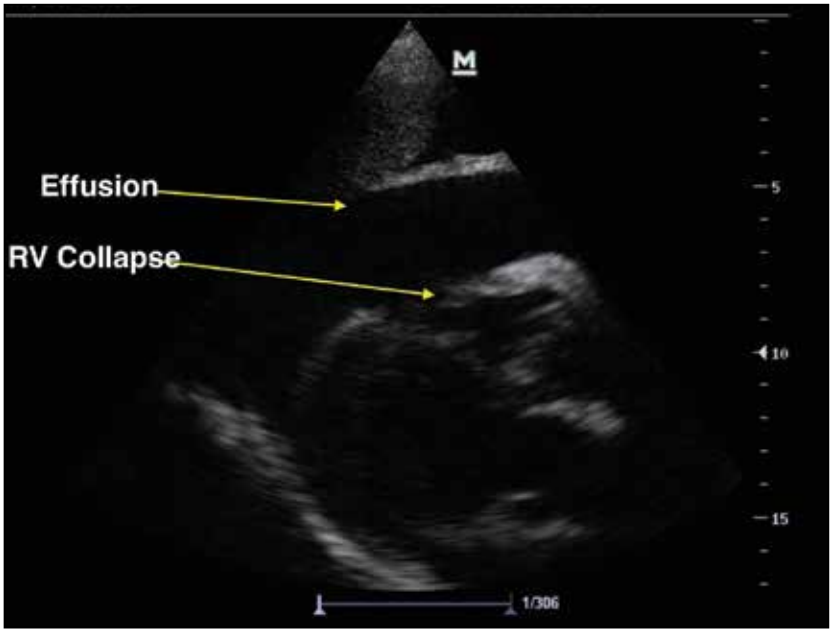

Figure 1: Tamponade – Note the large amount of anechoic pericardial fluid and bowing o the right ventricle

move this line over your selected area of interest within the 2-D image. Press M-mode again and the ultrasound will plot the changes in the brightness of the echoes under the cursor line over time. Make sure to hold your hand very still and anchor on the patient so your object of interest stays in the correct position under the cursor. Parasternal long axis view of the heart is best for EPSS measurements. The M-mode cursor is placed over the distal tip of the anterior leaflet of the mitral valve. We can see how the anterior and posterior leaflets open during diastole and close during systole. We are using this image to calculate the E-point (early diastolic filling) to septal separation or EPSS. This distance between the valve and the septum at the beginning of diastole is a marker of LV systolic function.[1]

This measurement (in mm) represents the distance from the anterior septal endocardium to the maximum early opening point of the anterior mitral leaflet during early diastole and correlates with ejection fraction. An increased EPSS is specific for decreased ejection fraction. A normal EPSS is 6mm or less which correlates with a normal EF, between 6mm and 12mm correlates with a low normal EF and any measurement above 12mm correlates with a low EF. Of note, however, EPSS ejection fraction approximations are inaccurate in patients with mitral valve disease, especially mitral stenosis.[2]

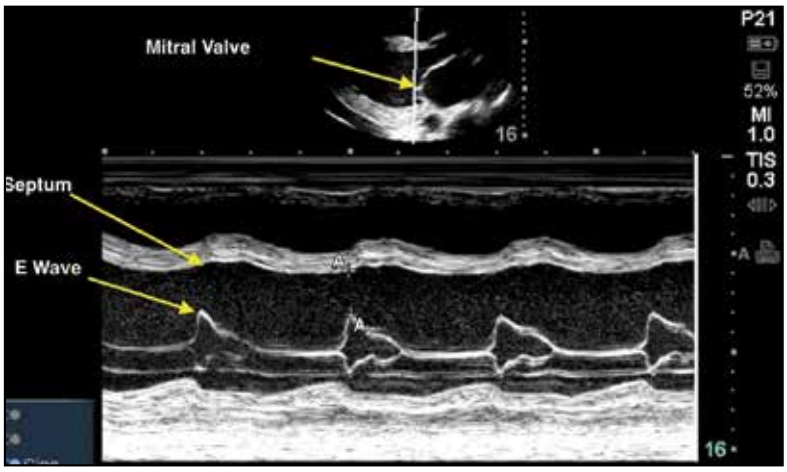

Figure 2: EPSS measuring at 27.5mm, suggestive of severly decreased ejection fraction.

3. Pulmonary Embolism (Chamber Size)

Deep venous thrombosis may be visualized on ultrasound by the presence of an intra-luminal clot and/or incomplete venous wall coaptation under pressure. ED bedside ultrasound detection of pulmonary embolism, however, is an indirect assessment; we may not simply assess pulmonary vasculature using ultrasound. Rather, clinically significant pulmonary embolism is detected through ultrasound confirmation of right heart strain. Right ventricular enlargement, along with the "D" and McConnell's signs are ultrasonographic surrogates of right heart strain.

Healthy right ventricle is two-thirds the size of its left counterpart. Right heart strain, however, results in right ventricular dilation with the ventricle appearing as large or even larger than the left ventricle.

The D-sign is located in the parasternal short axis view. Healthy hearts have a large circular left ventricle with a much smaller right ventricle in this view. Right heart strain leads to a larger right ventricle compressing the left ventricle during systole. The left ventricle appears shaped like a capitalized "D."

Right heart strain may lead to wall motion abnormalities. McConnell's sign is simply an akinetic free wall of the right ventricle with sparing of the apical section. This is the only sign that is specific for PE.

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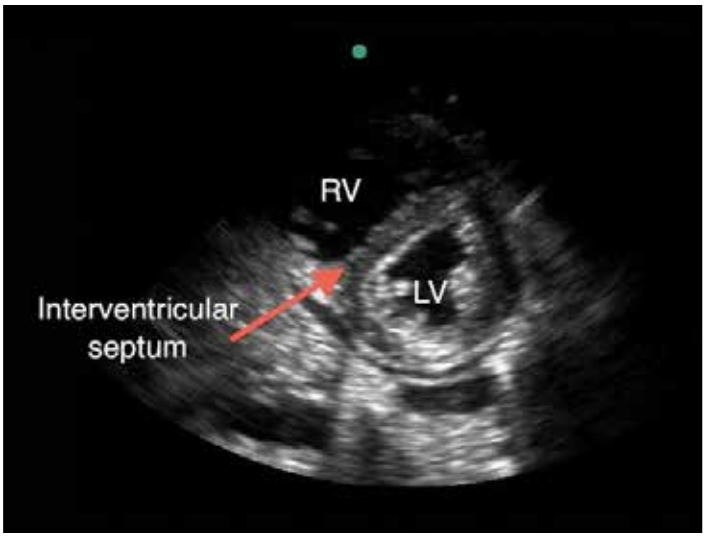

Figure 3: D-sign – indicative of increased right heart strain

Cardiomyopathy

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Emergency physicians commonly encounter patients with cardiomyopathy in the clinical setting. Understanding the classifications is helpful in the treatment and ultimate disposition of the patient. The following article is a review of the types of cardiomyopathy, along with some physical exam characteristics and some EKG findings.

Clinical Features

Cardiomyopathy is a disease of the myocardium causing cardiac dysfunction. In the U.S. cardiomyopathy ranks as the third most common form of heart disease, behind coronary heart disease and hypertensive heart disease. Classification of cardiomyopathy had been confusing, and in 1995 the World Health Organization defined and classified the cardiomyopathies based on the dominant pathophysiology.[1] This system is accepted today and the classifications are recognized as dilated cardiomyopathy, hypertrophic cardiomyopathy, restrictive cardiomyopathy, and the rare arrhythmogenic right ventricular cardiomyopathy. The task force also recognized unclassified cardiomyopathies that do not fit into any group, as well as diseases that present with features more than one type of cardiomyopathy (i.e., amyloidosis, systemic hypertension). Specific cardiomyopathies were also recognized, which are classifications based on specific cardiac or systemic disorders. (Table 1).

Dilated cardiomyopathy

Dilated cardiomyopathy is usually idiopathic and represents global myocardial dysfunction. Men are affected more than women, and although dilated cardiomyopathy may affect any age group, middle age is most susceptible (ages 40-65). Left and right ventricular function is depressed and although onset may be insidious, systolic pump failure is the usual presenting feature. Patients present with signs and symptoms of CHF: shortness of breath, dyspnea on exertion, paroxysmal nocturnal dyspnea, and orthopnea. Patients may present with chest pain on exertion. Dilated cardiomyopathy is the most common cause of heart transplantation at all ages. Peripartum cardiomyopathy is a form of dilated cardiomyopathy. Drug use can cause transient dilated cardiomyopathy.[2,3]

Hypertrophic Cardiomyopathy

Hypertrophic cardiomyopathy has been called idiopathic hypertrophic subaortic stenosis (IHSS), obstructive cardiomyopathy, asymmetric septal hypertrophy, hypertrophic obstructive cardiomyopathy, and muscular subaortic stenosis. The disease causes hypertrophy of the left

Table 1

Specific Cardiomyopathy	Examples
Ischemic cardiomyopathy	Coronary artery disease
Valvular cardiomyopathy	Valve disease
Hypertensive cardiomyopathy	Hypertension
Inflamatory cardiomyopathy	Myocarditis due to viruses, HIV
Metabolic cardiomyopathy	Endocrine, familial storage disease, deficiencies (electrolyte, nutritional)
General system disease	Connective tissue disorders
Muscular dystophies	Myotonic
Neuromuscular disorders	Duchenne, Becker
Sensitivity and toxic reactions	Alcohol, catecholamines
Peripartal cardiomyopathy	

Reference

Chan TC, Brady WJ, Harrigan RA, Et al, (Eds): EKG in Emergency Medicine and Acute Care. Elsevier Mosby, Philadelphis, 2006.

ventricle without dilatation, and usually the septum is more hypertrophied than the ventricular free wall. Hypertrophy may cause a small left ventricular cavity, or if the ventricular cavity is normal, decreased wall compliance. Decreased compliance then causes an increase in left ventricular filling pressure, which leads to restricted left ventricular filling. Cardiac output and ejection fractions are normal. Clinical symptoms are the result of restricted left ventricular filling. The most common symptoms are dyspnea on exertion followed by chest pain, palpitations, and syncope. Severity of symptoms correlates with severity of the disease. Hypertrophic cardiomyopathy is a cause of sudden death in young athletes, most of who have normal coronary arteries at autopsy and a family history of sudden cardiac death.[4] Physical exam may reveal a loud S_4 gallop and a midsystolic murmur, which is crescendo decrescendo. Valsalva maneuver or squatting decreases venous return to the heart, which increases the obstruction of hypertrophic cardiomyopathy, and increases the intensity of the murmur. The murmur is less intense on lying down.

Restrictive cardiomyopathy

Restrictive cardiomyopathy is the least common form of cardiomyopathy in developed countries. Most cases are idiopathic, but other diseases that can cause restrictive cardiomyopathy are amyloidosis, sarcoidosis, hemochromatosis, scleroderma, and neoplastic infiltration. In this disorder, fibrosis or other lesions invade the myocardium leading to rigid ventricular walls and limited ventricular filling. Systolic function is normal and ventricular thickness may be normal or increased. Restrictive cardiomyopathy is difficult to differentiate from constrictive pericarditis. Patients present with exercise intolerance and typical signs of congestive heart failure.Patients with restrictive cardiomyopathy do not tolerate volume depletion, and may present with syncope. Signs of right-sided congestive heart failure may be present with right upper quadrant pain, hepatomegaly, and ascites. Chest pain is unusual unless the restrictive cardiomyopathy is due to amyloidosis. The chest x-ray may demonstrate signs of CHF with a normal sized cardiac silhouette.

Arrhythmogenic Right Ventricular Cardiomyopathy

An exceedingly rare form of cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy is a disease process in which myocardial cells in the right ventricle are replaced by fibrofatty tissue. Replacement of myocardium begins in the right heart and may eventually spread to the left, but the septum is spared. This cardiomyopathy has a familial predilection and patients present at a young age with ventricular dysrhythmias or sudden death. Physical exam is normal.

Electrocardiographic Manifestations

Dilated Cardiomyopathy

EKG changes in dilated cardiomyopathy are nonspecific, but the EKG is always abnormal. Nonspecific ST-T wave changes are the rule and depending on the amount of dilatation left ventricular hypertrophy and left atrial enlargement are common. Another common EKG manifestation is poor precordial R wave progression associated with Q or QS waves in the anterior precordium. The pattern of Q or QS waves and poor R wave progression resembles myocardial infarction and is called a pseudoinfarction pattern. Atrial fibrillation may be present. Interventricular conduction delay and left bundle branch block are common. Ventricular ectopy is not uncommon in severe dilated cardiomyopathy.

Electrocardiographic Differential Diagnosis

Dilated Cardiomyopathy	**Hypertrophic Cardiomyopathy**	**Restrictive Cardiomyopathy**	**Arrhythmogenic Right Ventricular Cardiomyopathy**
Atrial fibrillation	Myocardial Infarction	Normal sinus rhythm	Right bundle branch block
Ventricular tachycardia	Pseudoinfarction	Atrial fibrillation	Ischemia/Infarction
Myocardial infarction	Left ventricular hypertrophy	Ventricular tachycardia	Ventricular tachycardia
Pseudoinfarction	Left atrial enlargement	Myocardial infarction	Ventricular fibrillation
Left ventricular hypertrophy		Low voltage	
Left atrial enlargement		AV block	
Interventricular conduction delay		Complete heart block	
Left bundle branch block			
Poor precordial R wave progression			

Electrocardiographic Highlights

Dilated Cardiomyopathy	Hypertrophic Cardiomyopathy	Restrictive Cardiomyopathy	Arrhythmogenic Right Ventricular Cardiomyopathy
Always Abnormal	Left ventricular hypertrophy	Left axis deviation	Right bundle branch block
Left ventricular hypertrophy	Left atrial enlargement	Low voltage	
Left atrial enlargement	Septal Q waves may mimic infarction: look at the T waves	Atrial fibrillation	
Interventricular conduction delay	Diminished or absent R waves in lateral leads	Ventricular arrhythmias	
Left bundle branch block	Upright T waves in leads with septal Q wave means pseudoinfarction	AV block	
Poor precordial R wave progression		Complete heart block (sarcoidosis)	
Atrial fibrillation		Infarct patterns with treated sarcoidosis	
Ventricular arrhythmias			
Amount of change correlates with amount of disease/dilatation			

Hypertrophic Cardiomyopathy

The EKG is abnormal in 90% of patients with hypertrophic cardiomyopathy. Dominant EKG findings are left atrial enlargement and left ventricular hypertrophy. Enlargement of the septum may produce a large Q wave, called a septal Q wave, in the anterior, inferior or lateral leads. Septal Q waves may mimic myocardial infarction, producing a pseudoinfarction pattern. Nonspecific ST-T wave changes, T wave inversions, large T waves, and absent R waves in the lateral leads are all common EKG findings in hypertrophic cardiomyopathy. Apical hypertrophic cardiomyopathy is a variant of this disease that produces giant negative T waves in the left precordial leads.[5] Atrial and ventricular dysrhythmias are not uncommon. Atrial fibrillation is poorly tolerated because LV filling is restricted, and LV filling depends greatly on the atrial component. Other dysrhythmias include premature atrial contractions, premature ventricular contractions, and multifocal ventricular ectopy.

Restrictive cardiomyopathy

EKG findings in restrictive cardiomyopathy are nonspecific ST-T wave changes and low voltage. Left axis deviation may be present. Patients with restrictive cardiomyopathy due to amyloidosis or sarcoidosis may present with atrial fibrillation due to atrial enlargement. Patients with restrictive cardiomyopathy due to sarcoidosis have cardiac granulomas deposited in the septum, which can cause conduction abnormalities. These patients may present with ventricular arrhythmias or complete heart block, and there is a high risk of sudden death. Cardiac granulomas can also occur in the ventricular wall. After treatment with steroids these granulomas produce scars that appear as Q waves resembling healed MI.

Arrhythmogenic Right Ventricular Cardiomyopathy

Pathology in this entity is primarily in the right ventricle; therefore EKG findings may show a right bundle branch pattern and precordial T wave inversion.

In patients with dilated cardiomyopathy the degree of left ventricular hypertrophy and left atrial enlargement corresponds roughly to the degree of dilatation and disease.

Patients with an apical variant of hypertrophic cardiomyopathy may demonstrate large negative T waves on EKG. Patients with hypertrophic cardiomyopathy and EKGs that demonstrate septal Q waves, the T wave may help distinguish between infarction and pseudoinfarction. In the leads that have the Q waves, an upright T wave suggests hypertrophic cardiomyopathy, whereas an inverted T wave suggests ischemia.

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Another Kind of "Difficult" Patient

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A 20-ish woman with a long history of opiate use was admitted to the hospital with thrombophlebitis in the external jugular vein. Early in her hospitalization she was discovered by nurses to be stealing needles from equipment carts and was suspected of using cocaine in the hospital. She was found to have methicillin-sensitive staphyloccus aureus, and required intravenous antibiotics. A decision was needed whether to use a peripherally inserted central line (PICC line), or to use one of her peripheral veins which were in poor condition for antibiotic infusion. The decision was made to use peripheral veins. When the resident told the patient a PICC line would not be used, saying in a scolding manner "you're just going to use with it," a student cringed at his "accusatory tone and shoddy bedside manner." After the resident left the student told the patient that what the resident had said was "inappropriate, insulting, and uncalled for." The patient responded with a chuckle.

The student began arriving at the hospital early so that he could talk with the patient. Despite this extra attention, the patient, after having been taken off observation precautions, used drugs in the hospital just prior to discharge, leaving the student feeling shocked and gullible at having been (his words) "played by the seductress."

After recovering from this new awareness, the student went on to say that he aspired to become a physician who was neither an enabler nor a skeptic, but a patient advocate who would be cautiously optimistic about a patient's intentions.

This case comes from an article in the *Annals of Internal Medicine*, and, written by a medical student illustrates a different kind of "difficult patient encounter." Usually, when physicians consider difficult patient encounters, they think of patients who cause them to feel angry over such issues as chronic treatment nonadherence, aggressive or demeaning attitudes towards physicians, self-inflicted conditions, or similar behaviors. These kinds of behaviors challenge physicians ethically, as physicians must attempt to respond to such behaviors without hostility, so as not to violate the principle of nonmaleficence (a duty to avoid doing things to patients which cause unnecessary harm). Another ethical challenge with such patients relates to the principle of beneficence (the duty to provide beneficial care to patients) so as to provide the best care, not denying care based on personal feelings of animosity.

This case described by Johnson, beautifully written and showing much sympathy for the patient, illustrates another kind of difficult patient encounter, one not listed among the 15 kinds of difficult patients described by Steinmetz and Tabenkin. In this case, the patient is one who caused the physician (or student in this case) to feel especially good about his role and his relationship to the patient.

Perhaps the primary ethical challenge in caring for such patients is attempting to maintain professional boundaries and professional objectivity. Such "special" patients can split staff into "good" and "bad" staff, based on the patient's need either to idealize or to devalue others. Being the object of a patient's idealization can create feelings in physicians which make it difficult to provide care based on the patient's objective condition and needs.

For example, after the resident tells the patient about the decision not to use a PICC line, the student told the patient what the resident had said was inappropriate and insulting. But was it the place of a student to comment on the resident's behavior to a patient? If the student had concerns, shouldn't he have gone to the resident and asked politely about why the resident had phrased things in that manner? Instead, the student crossed a boundary in which his role was to function as a member of a medical team, and which required

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team members to present a united front so as to reduce the likelihood of splitting. The patient's response to the student was telling, when she "let out a subdued chuckle." This seems to confirm the suspicion that what the student did fed into splitting behavior, where the resident would now be devalued and seen as the bad figure, and the student would be idealized as the patient's rescuer. This usually unconscious dynamic can lead to poor outcomes for the patient, as, left unchecked, members of a team work from opposite assumptions about the patient and her motivations (good vs. bad) and team members may then arrive at opposite conclusions about the patient's needs.

It is possible the patient's dynamics may have started early in her hospital course, and played out in a potentially controversial decision not to use a PICC line. For prolonged IV access, especially in this case where peripheral access was problematic, a PICC line would seem to be preferred – one wonders whether the decision to deny the patient this care resulted from negative attitudes on the part of the resident after learning that the patient had been found stealing needles from a nursing cart. The reason given to the patient for not using a PICC line, that the patient would use it for drug use, would seem to be questionable, as the peripheral IV could be used similarly.

The case continued by noting that the patient, with a long history of drug abuse and a recent history of attempting to gain access to drug paraphernalia while in the hospital (perhaps even using cocaine while hospitalized), was taken off close observation prior to discharge. She then used drugs while in the hospital before being discharged to a drug rehabilitation program. Was the decision to take her off close observation another result of responding to feelings she created in the medical team?

I am a psychiatrist, and know too well that even physicians trained in such things as countertransference (i.e., the feelings created unconsciously in physicians towards patients) are not immune to acting on these feelings. It can be extremely difficult to remain objective, and to engage with true empathy, when strong feelings are aroused in us. In Johnson's case, a psychiatrist was asked to see the patient during her hospitalization to determine if she was subject to involuntary hospitalization and commitment to a rehabilitation program. According to the author, the psychiatrist "mandated" a three-week commitment without speaking to the patient, stating that "[t]his patient is a professional seductress...she will say anything to get back out and use." Most states (including Georgia) require a personal examination as the basis for a commitment, and I suspect the psychiatrist saw the patient as "difficult," perhaps based in part on what he was told by others, and he acted out the dynamics accordingly. The ethical course would have been to have conducted the examination, and if a commitment was warranted, this could have been explained to the patient in a manner that respected her feelings even in the face of her likely angry response.

This brings up another ethical challenge presented in this case – the ethical requirement to respect patient autonomy (the right of patients to participate in medical decision making to the extent to which they are capable). Had the patient been approached more sympathetically by the psychiatrist, I wonder if she might, however reluctantly, have agreed to a voluntary admission to a rehabilitation program. If she refused, a commitment hearing could have been pursued to determine the appropriate course, but there would at least have been an attempt to respect her ability to make decisions. Similarly, I was left wondering what happened to patient autonomy in the decision whether to insert a PICC line versus using fragile peripheral veins for a course of antibiotics. Could not the pros and cons of which to use have been presented as a shared decision, with the understanding that constant observation to prevent misuse of the line would be needed in either case?

I wish I could say I did not find such patients challenging to my own ethics and professionalism, but such is the nature of medical practice that, sooner or later, most of us will encounter patients who will prove difficult for us personally, based not solely on biomedical issues, but on our own psychological experiences and vulnerabilities. I have appreciated having colleagues with whom I can discuss such issues and have hope others will have the same opportunities when confronted with "difficult patients." Perhaps it is time to revisit the usefulness of Balint groups where physicians meet to discuss problematic patient encounters, in the hope of reducing compassion fatigue and burnout, and thus improving patient care.

Help Me! I'm Behind With My Retirement

Setu Mazumdar, MD, CFP, President and Wealth Manager, Lotus Wealth Solutions

Q: I'm 55 years old and I've been practicing emergency medicine for 20 years, but I don't have much to show for it. My retirement portfolio is about $500,000. I'm getting tired of working nights and weekends, and I feel like I'll never be able to walk away. What should I do?

A: First, you're not alone. I've spoken to numerous physicians your age and older who feel the same way. Second, you've acknowledged that you're behind in the retirement game – WAY behind I might add. A couple of reasons may explain this. Perhaps you made a ton of financial mistakes early on in your career, you spent too much, you got divorced, or maybe you were burned by a financial advisor.

I read somewhere that after you turn 40, your ability to adjust to nightshifts goes down significantly (personally I never got used to them even when I started practicing at age 27). I can only imagine how you feel in your 50s, especially with the face of retirement staring at you.

So here are 5 steps you can take to transform yourself from an underdog to a winner:

1. Figure out how big of an investment portfolio you need to retire

This is actually a very complex calculation with numerous variables, but it begins with getting a ballpark idea of what you think you'll be spending during retirement, then factoring in Social Security payments (yes it will exist for you) and any other income such as part time work. You then backtrack the shortfall and figure out the size of your retirement portfolio that will allow you to spend the desired amount of money.

For example suppose you want to retire at age 65 with a $2 million investment portfolio (in future dollars). Then with your current portfolio and assuming a 7% annual rate of return, you'd have to save close to $75,000 annually.

2. Play catch up in your accounts

The question then becomes, how do you maximize your contributions? The good news is that above age 50, you've got more help from the government. If you are an employee, you

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can contribute a maximum of $17,500 into your 401k plan plus an additional $5,500 catch up contribution above age 50 for a total of $23,000. And remember your employer may match a portion of that.

As an independent contractor, if you've set up a SEP IRA, then you can contribute a maximum of $52,000 in 2014 assuming your income allows you to. I suggest you open a solo 401k so you can split the contributions between employee and employer. That results in you ability to take advantage of the $5,500 catch up contribution on the employee side for a max contribution of $57,500 this year. If you're truly serious about saving, then set up a defined benefit plan which may allow you to contribute far more than the limits above to reach your $75,000 annual savings goal.

You can also play catch up in a traditional IRA and contribute $5,500 plus $1,000 catch up above age 50 for total of $6,500. So if you contribute the max to a solo 401k and traditional IRA, that'll bring you up to $63,000. The remaining $12,000 should be invested in a taxable brokerage account.

3. Balance the risk/reward equation

You've probably heard that as you approach retirement, you should cut down the risk in your portfolio. I think that rule of thumb is OK if you've built up a sizable retirement portfolio, but you're behind so you'll need to take some risk. The right way to think about this is that if you're committed to saving $75,000 a year, then the new contribution effectively creates a 15% cushion on the value of your portfolio. In other words a 15% drop from market losses is offset by the new contributions you add. The high savings rate allows you to take more risk even though your age doesn't.

4. Be flexible

Realize that assumptions are just educated guesses and that it's unlikely actual events will play out as you'd hoped. For example, suppose you achieve a negative return of -10% per year for the first two years (still assuming you contribute $75,000 annually and get 7% return after second year), then to get to your $2 million target you'd have to start saving about $100,000 annually. Unfortunately that's a feat most EPs simply won't achieve. So you could delay retirement by just one year, in which case you can bump up your savings by about $5,000 more annually and still get to $2 million.

From a career perspective negotiate a lower salary with your group in exchange for not working nightshifts. This buys you more years to work and reduces the burden of contributing so much annual money to your retirement accounts.

5. Make some unpleasant adjustments

No one wants to be told to simply give up on some goals, but unlike the government you can't just print money out of thin air to fund your fantasy retirement. So make a list of current big expenses you'll have to cut down or eliminate. Here's a start:

- If you've got kids in college and you're footing the entire bill, get your kids off your leash and make them work to generate income. Or tell them you're not sending them to an out of state public university or private college – in state will get you there just fine.

- If you have a mortgage, refinance it at today's lower rates and consider NOT paying it down. That's unconventional advice but your first priority is to shore up your tax deferred accounts not pay down the 3.5%, 15-year fixed loan.

- Downsize your home even if you have a loss. The lower mortgage payment, lower maintenance costs, and lower property taxes can be used to invest instead.

- Move to a state with a lower cost of living or lower state income tax. Assuming you find an equivalent job and pay, this move automatically boosts your investment contributions

And finally another key to successfully achieving your retirement goal is speed.

Twiddling your thumbs and hitting for par just isn't going to cut it. You simply don't have as much time as the fresh faces graduating from residency. Action gets results not procrastination.

Reimbursement Update

Chip Pettigrew, MD, FACEP, ACEP Rembursement Committee

Permanent SGR relief was put off until April 1, 2015, via another temporary patch. This politically charged (due to its effect on the budget) item will likely NOT be permanently fixed then, either. We should all plan on a continuation of temporary fixes until they can no longer be sustained by "robbing Peter to pay Paul." I have no idea when that will be, but not likely anytime soon. It's already too late (too expensive) for a permanent fix.

Limited ACA enrollment and the very high deductibles ($2000-$4500/person; $4000-$9000/family) in these plans will exacerbate billing and collections problems for EPs, especially early in the year before the patients' deductibles are met.

The lack of Medicaid expansion in Georgia (another political decision) will mean that the benefits of more covered lives in other states will not extend to Georgia. Regardless of your political feelings, your pocket took a hit when Georgia's leadership decided not to participate in the Medicaid expansion offered by the federal government.

Preliminary findings show that nearly all ACOs in the USA are NOT including ED physicians in the at-risk pool of physicians. Most ACOs continue to pay for ED physician services on a fee-for-service basis, just like most commercial insurance plans. A few ACOs in the US are incuding EPs in the bonus pool for cost savings. An ACEP White Paper on ACOs is in the works with the ACEP Reimbursement Committee.

The transition to ICD-10 has been delayed (again) until October 2015. Some pros and cons to this political decision. I don't expect it to be delayed again beyond 10/2015.

There was a wonderful article on the use of scribes at www.medscape.com dated February 27, 2014 ("Hate dealing with an EHR? Use a scribe and profits increase"). Most scribes find work in EDs. They are just transitioning out to other sites of service. The bottom line of this lengthy article was that scribes increase physician productivity, increase physician time with patients and decrease physician time with documentation, insure proper documentation of E&M services and procedures, increase revenue by better documentation and increased physician productivity, increase physician satisfaction with work, and increase patient satisfaction. WinX7!

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