Welcome to the Fast Track

Every January the new year brings with it things like football, a new semester in school, and newly elected ACOEP-SC officers. Having just had elections in October, your new ACOEP-SC officers would like to welcome you to the chapter and share with you all of the projects we are working on for the coming school year in this copy of the Fast Track.

As medical students, the new year is generally a time when all of us are just starting to hit our strides regardless of how far along we are. First years have made the transition to graduate school, while second years are becoming student leaders and planning for rotations. Third years have gotten their first required rotations under their belts, and fourth years are interviewing for residency slots and waiting for the match. It’s an exciting time of year for all of us as we each start to adjust and get comfortable with where we are in our training.

Once you have found your stride stick with it and let it carry you through winter. As your new officers we have hit the ground running and look forward to serving our members throughout the year. As always, please contact us because we are happy to help and love hearing from you.

Sincerely,

Joe Sorber
ACOEP-SC President
OMS IV, WVSOM
Newly Elected ACOEP Student Chapter National Officers

President—Joe Sorber, OMS-III at WV SOM
Taking over for Andy Little, my main goals are to continue to advocate for the ACOEP-SC members to the ACOEP Board of Directors. In addition, I aim to promote Osteopathic Emergency Medicine, help improve and develop the Annual ACOEP-SC Leadership Academy. It will also be a privilege and honor to help coordinate and work side-by-side with the ACOEP-SC National Officers and Board Members to improve the student member experience.

Vice-President—Stephanie Zaugg, OMS-IV at OU-HCOM
As Student Chapter Vice President, my primary goal this year is to continue connecting with local chapters via the President’s Committee conference calls. I will also be updating our student chapter packet and contributing to the Leadership Academy. Overall, I hope to be available to any of our members to help with any needs that they may have.

Secretary—Shaun Notman, OMS-III at NOVA
Since attending my first conference in 2009, I have been dedicated to contributing to the organization by assisting others who want to get involved in emergency medicine and helping to advance the student experience. I am honored to have been chosen to continue my commitment to the ACOEP-SC and look forward to helping user it into a new chapter of its development. My primary goals are to increase communication and efficiency, pursue new electronic avenues of distributing information and resources, and to facilitate in meeting the needs of local chapters for their success.

Treasurer—Jessica Wentling, OMS-II at TCOM
Over then next year, I plan to keep our financials on track, maximize income and represent the student chapter at finance committee meetings. I want to continue to progress the student chapter to new heights for success and financial stability.

Convention Co-Chair—Drew Kalnow, OMS-III at WV SOM
My goal as the National Convention Co-Chair is to continue the tradition of the ACOEP-SC hosting exceptional and student focused conferences. Ashley and I are currently planning the Spring Conference in Scottsdale, AZ which will include lectures and labs during the day and social events with residents and attendings at night. Among the highlights for the Spring Conference will be both a Resident Panel discussion and a Program Director Panel discussion that will allow students to ask questions about all things pertaining to emergency medicine.

Convention Co-Chair—Ashley Gurthrie, OMS-II at NOVA
I am excited to help make this next conference as great as the past conferences! For my part I am working on bringing a mock mass casualty incident to the Spring Conference and I am also working on ways to help first and second years become more involved through local chapter participation as well as on a national level.

GME Chair—Jessica Bennett, OMS-II at A.T. Still
My focus this year is to organize the Residency Director Panel and Resident Panel for the 2012 Spring Conference in Scottsdale, AZ and to coordinate the Fall 2012 Residency Fair in Denver, CO. Our goal for this residency fair is to attract more programs in attendance than ever before.

Publications Co-Chair—Jonathan Donahue, OMS-II at WV SOM
As Publications Co-Chair I plan to further enhance the aesthetic value and depth of material presented in the Fast Track. This will include working with the student chapter presidents to increase participation of members in the ACOEP publications. I will also assist the Convention Co-Chairs with organizing and promoting the 2012 spring and fall seminars with a primary goal of increased student member attendance.

Publications Co-Chair—Tanner Gronowski, OMS-III at PNWU
I am excited to be a part of the ACOEP-SC on a national level and have a primary goal of taking the exposure and quality of the student chapter publications to the next level. We have a unique opportunity to expand on The Fast Track, conferences, website, and Facebook group this year, and with some focused direction we can create a staple that osteopathic medical students nationwide can utilize and refer to throughout the coming years.

Research Chair—Suleman Ahmed, OMS-II at Touro Nevada
The primary goal for my position is to increase the enthusiasm for emergency medicine research amongst medical students. Emergency medicine (EM) research is the most exciting research in medicine because there are so many issues faced. Medical problems area large part of the research, but a wide range of social and public health concerns - from research on alcohol screening and intervention to intimate partner violence - are essential components of the research. I also want to build a database of research resources students can go to get more involved.

Constitution and Bylaws Chair—Ryan Butler, OMS-III at KCUMB
My position is in good standing after the work of my predecessor, so my primary goal will be to review the student chapter constitution and bylaws and ensure their enactment. Secondarily, I will be a support avenue for other chair members, contributing in things such as finding affordable hotels for conferences, help design a mass casualty event, and any other areas that may need an extra hand.
Letter from the Editor

Recently, while listening to some TED talks on my way to the clinic at my current rotation, I came across a unique idea that was presented by a jazz musician. His claim was that there is no such thing as a mistake. Being a medical student who spends most of the day still stumbling through differentials, treatment plans, and pimp questions, I initially scoffed at the idea. “Mistakes aren’t real? I beg to differ. My preceptor makes sure I know mistakes are real every day!” But the musician went on to explain his theory.

He describes how in jazz, mistakes are not really considered mistakes but rather opportunities. While playing a jam session, if a band member plays a wrong note you can either interpret it as a mistake, or you can utilize that new note as a starting platform for the next section of music. Mistakes only depend on your perspective. If some action or word or idea is considered wrong and incorrect, it will be a mistake. Now, how about if we take that same action or word or idea and instead of considering it wrong or incorrect we just consider it an opportunity, some avenue or door into something new. This new avenue allows an entirely new perspective to be created and flow forth, provided that those who are interpreting it allow it do so.

As I was listening to this, I began to realize how true this was. I make mistakes all the time. Sure my skills and knowledge are far beyond what they were at the beginning of my medical school journey, but I am far from perfect. There is no doubt that with all the mistakes we make on our way to becoming practicing physicians, it can be easy to get down on ourselves. But what if we try to look at mistakes not as mistakes, but opportunities instead? If I am in surgery and I get pipped on the degrees of rotation of the gut during fetal development (Answer? 270°), I can look at it one of two ways. A) I made a mistake or B) Oh, that’s the answer! Apparently I need to review my embryology a bit! Who knows where reviewing that topic may take me or how it will help me out down the road.

This interpretation of seizing the opportunities around us and not being defeated by mistakes is something we all should consider on a daily basis. It can apply to almost any aspect of life. Family, friends, and careers, all of it is riddled with chances to ignore the mistakes and make new and exciting things happen. I urge you, physicians and students alike, to consider this idea for the next few days and try it out. In the complex and intricate music of life, don’t view wrong notes as mistakes, but rather an opportunity that shouldn’t be missed.

The Fast Track is living up to this idea, and taking the opportunities of the past to develop and create a new and improved product. In the following pages you’ll find the start of that process, as we have combined the old Emergent and Fast Track into a super-publication called The Fast Track. With anecdotal stories, research articles, student and resident contributions I can promise a much more robust and fulfilling publication to all ACOEP members. I hope you like our first issue, and we’ll continue to propel ourselves to greater heights in an effort to make something everyone will enjoy.

Cheers,

Tanner Gronowski OMS-III, Co-Editor
ACOEP-SC Publications Co-Chair
Pacific Northwest University Class of 2013

Case Presentation
Joshua Batt OMS IV
Touro University Nevada

A 22-year-old male presented to the emergency department after an altercation with another individual in which he had an injury of unknown mechanism to his right foot. The patient complained of 5/10 pain with ambulation, significant swelling of the foot and no other symptoms. He had no associated history of illness, injury or surgery and denied the use of substances.

On examination the patient’s blood pressure was 138/89, pulse 80, respiration rate of 16, and oxygen saturation 99%. While calm and cooperative, he had an obvious limp upon arrival, favoring use of his left foot. The dorsum of the right foot demonstrated significant soft tissue swelling with ecchymotic changes of the skin. The midfoot was tender to palpation with limited pedal range of motion at the digits, midfoot and ankle due to pain. The pedal pulses were strong and regular with a capillary refill less than 2 seconds and intact sensation. These findings were comparable to the left lower extremity and therefore determined to be within normal limits. No other acute findings were noted on examination.

What is the diagnosis? Continued on page 4

Studying. It never ends, so you might as well study somewhere that inspires you.
Case Presentation Cont.

A: Lisfranc fracture-dislocation of the right foot

Discussion

The Lisfranc joint consists of the five articulations between the midfoot and forefoot at the tarsometatarsal joints. The Lisfranc ligament is the only ligamentous connection between the first and second metatarsals adding tension to the foot’s transverse and longitudinal arches. As this joint acts as a keystone to the foot, diagnosis of such fractures is critical to a positive prognosis. Patients may have swelling out of proportion with normal roentgenograms, ecchymosis of the plantar midfoot or localized midfoot instability. Tenderness is commonly elicited at the tarsometatarsal joint upon palpation, weight bearing or motion testing.

Lisfranc injuries are uncommon and up to 20% may be missed on initial presentation due to radiographic subtleties. An anteroposterior image of the foot is considered positive for a Lisfranc dislocation if the medial border of the second metatarsal base and medial border of the middle cuneiform are not in alignment. Separation of the first and second metatarsal bases greater than 2mm is consistent with a Lisfranc injury, as can be seen in the image above.

On the Other Side of “The White Coat”

By Drew Kalnow, OMS-III WVSOM

Just a few months into my third year rotations, I found it easy to be comfortable behind the sense of security that comes with wearing the white coat. Talking to patients and their families - whether bearing good or bad news - comes with a professional approach. Any good doctor should be able to show and feel compassion for their patients, but at the same time not become caught up in a family’s emotions during a difficult situation. As medical professionals, we are expected to have the answers to or at least be able to explain and work through almost any situation. But what happens when we find ourselves on the other side of the white coat?

I received a call from my mother one night this fall. When I answered the phone, her voice was void of its usual life and instead was filled with confusion and a sense of fear. My stepfather, who was the picture of good health, was in the hospital, unresponsive with a “brain bleed” as the result of a fall while playing tennis. My mother simply asked me to “help her understand what was going on”. Immediately my heart sank and my mind raced. What help could I be some 300 miles away? I needed to find out more. My first instinct was to ask more about how this happened, and then to have my mom ask the ED staff a few more questions. What was the initial diagnosis? What labs and imaging studies have been done? Simply, I was trying to triage and diagnose over the phone.

My mother called me back a bit later after learning more from the ED physician. There was a subdural bleed in the area of my stepfather’s temporal lobe, and the CT scan didn’t show any fractures. He was going to be admitted to the ICU. She then asked me what I thought was going on. I will hear this question ad nauseum throughout my career, but this time the question carried so much more meaning to me. It carried my mother’s torn emotions. It was filtered through my sadness and apprehensiveness. It was heavy. I found coexisting inside of me the third year medical student, with his practiced detachment and constant analytical tendencies, alongside the son, with his sadness and his fear, on the brink of chaos. The medical student spoke with my mother.
My explanation on the phone was simple. "He has a bad injury. We need to wait to hear from the neurosurgeon to determine if there is anything that can be done surgically."

What I was thinking, but didn't know how to say was, "This is really bad. Acute subdural bleeds are BAD. It doesn’t sound good."

Before I left for the hospital I knew what to expect medically, and for the most part the picture I walked into was the same one I envisioned. What I hadn’t prepared for were the emotions of finally seeing my mother. When I arrived in the Neuro ICU, my mother, stepbrother and stepsister were all in the waiting room. She broke down a bit and so did I.

Later that morning the news went from bad to worse. In addition to having the subdural bleed, my stepfather’s basilar artery - the artery supplying his brainstem - was damaged and the brainstem was not receiving enough blood. The surgeons determined any surgery to try and repair the artery would just result in additional collateral damage. Cue reality number two, my stepfather was just another patient.

For a while it seemed that the entire hospital should be revolving around us. I became frustrated at the pace the hospital moved. How could there be another patient who is more important than my stepfather? Why was it taking so long for the scan results to come back? Why weren’t the doctors talking to us more often? Where was the attending? Why were we only talking to residents and students?

The most powerful experience from outside of the white coat was watching my stepfather being taken away in a body-bag to the morgue.

This single picture is one that I will always carry with me, it holds the ultimate sense of finality and of mortality. There was no doctor or even a nurse in the room, it was just my family, my stepfather and the people responsible for transporting him. The raw emotion of being a patient or patient’s loved one feels completely different from that of the doctor.

The time I spent with my stepfather in the hospital will have a lasting impact on my career as a physician. Simple, but easily overlooked acts, such as talking directly to the patient first regardless of their condition, has a tremendous impact. If test results are taking a long time or a physician has not seen the patient for some time, the act of “checking-in” can help to provide considerable comfort. Most importantly, I will be sure to always talk with the patient and their family and never talk at them.

When you are on the other side of the white coat, emotions that rarely cross your mind when you are the (student) doctor can quickly overcome you. Like any other patient or patient’s family, I was frustrated because I wanted to be part of the process, to look at the scans, to read the reports and notes and to be part of the discussion. Instead, I felt helpless. It is easy to forget the amount of respect, authority and even power that comes with the simple act of putting on the white coat.
Dealing with Death in the ED

Matthew Chung OMS-II
WVSOM Class of 2014

We all come from different walks of life, making choices that reflect us as individuals. As health care providers, we will face it all. This is especially true in the emergency department (ED). Visits can be stressful for both patients and families, obligating the care received in the ED to address the needs of not only the patient, but the family members as well. Of the many issues that emergency physicians encounter, death is a troubling one and can bring out the best or worst in people. Sadly, it is a common occurrence. According to Olsen, Buenefe, & Falco (1992) there were 176,000 deaths in 2004 that happened in United States emergency departments.

Dealing with death can be tough, but breaking the news may be even more difficult. In an interview conducted by Stayt (2009), nurses were asked what was important when telling loved ones the bad news. The common recommendations included intimacy, establishing trust, information giving, empathy, self preservation and significance of death. Establishing close doctor-patient relationships allows for a sense of trust and comfort to be built between the patient, their family, and the doctor. Unfortunately, this relationship is lost in the fast paced, bustling world of emergency medicine making it all the more difficult when telling loved ones of their loss. As a result of this environment physicians have a limited time to spend with grieving families due to the pressure to assess other patients.

Death is an all encompassing entity and physicians are exposed to it in many various situations. This could range from the sudden death resulting from a motor vehicle accident to a mother left by a son no longer desiring to care for her. In the first scenario loved ones are left with no opportunity for closure and the second leaves physicians in a situation requiring difficult decisions. With constant exposure to trauma, it is not surprising to hear that ED physicians and staff are mentally and emotionally fatigued. To cope with the overwhelming number of tragedies, psychological barriers may be built. Patients certainly may perceive the indifference as cold and heartless. To help alleviate the stress, hospitals develop protocols for dealing with death and breaking the news to family members. These serve as solid foundations to which each physician can build upon with their personal experiences.

Although I can try to empathize, I cannot fully appreciate at this point of my career the complex choices physicians face daily. Growing up, I had a childish understanding of what being a “doctor” meant, and I decided to go into the field of medicine for many different reasons. I envisioned the glory of saving lives or having the prestigious title of “Dr.” in front of my name. Never once did I consider the pressure of holding people’s lives and well-being in my hand, and by no means did I bring myself to imagine the first time I would lose a patient. However, the closer I get to being held responsible, the heavier it weighs on my mind. The biggest fear I have is losing my first patient and seeing the grief of the family. I feel that nothing will prepare me mentally, emotionally, or spiritually to face this. The guilt of losing someone will undoubtedly be a difficult
“The biggest fear I have is losing my first patient and seeing the grief of the family.”

burden. Death is a natural process in life and plays a major role in medicine. Coming to terms with this fact, will enable me to focus on those that I am capable of helping. A compassionate doctor once said, “If you stop feeling when you lose a patient, it’s time to hang up your coat.”

Works Cited

“No,” I reiterated, “it’s not good. Despite all of our attempts, we can’t seem to get your husband’s heart beating again.”

I turned to the case manager. "Are you ready, Cindy?" I asked, making sure she was prepared for the gravity of this unfortunate situation. She nodded "yes," confident in her skills during such adversity.

I turned back to face the beige, chipped door of the family room and knocked lightly. The noises of conversation and movement suddenly ceased, and I could easily imagine the stillness and anticipation that pervaded the room.

I rotated the door handle, gently pushing the door forward before stepping into the room. The air and energy of the room were stale and suffocating, especially after leaving the hallway atmosphere of chaos. My eyes darted quickly, taking in the whole of the room. On the couch, two elderly people, a man and a woman, sat on either side of a middle-aged woman, their hands linked in unity. The two corner chairs were filled with a middle-aged man in one, a college-aged boy in the other. All five people focused intensely on our arrival, their dilated eyes wary for the news I was about to bring them.
Before sharing my news, I briefly introduced both myself and Cindy and learned that this room contained the patient's wife, his in-laws, his brother, and his son. After shaking hands, I deliberately continued to hold on to the wife's hand while her father rubbed her back.

"It's not good, is it?" the wife asked me. I shook my head "no" to her question before saying the word out loud. "No," I reiterated, "it's not good. Despite all of our attempts, we can't seem to get your husband's heart beating again."

I had left Room 17 for the family room with a dismal feeling. The woman's husband, in his late 50's, had collapsed at work and, despite being intubated, having immediate CPR and being given all the appropriate life-saving medications by our prehospital team, still had not responded to any medical interventions. He had arrived at our facility ten minutes earlier, thirty minutes after his collapse. After several attempts of high-Joule defibrillations and multiple escalating doses of medications, our team remained unsuccessful in our resuscitation attempts. I had left his room with the patient in asystole, a malignant situation where the heart was not making any electrical signals to stimulate itself to beat. It was not looking good.

For the next several minutes, I explained to the family, with earnest, what our medical team was doing in attempts to resuscitate their loved one. After I finished, the wife stood from the couch and dropped to her knees, half in prayer and half in disbelief. "Please, Gary," she wailed in a desperate voice, "don't leave me yet. I want to talk to you one last time."

After helping her back to her feet, I offered her to come to Gary's room with me to be with him during our resuscitation efforts. She accepted.

The patient's wife, Cindy and I walked back to Room 17. As we neared it, I explained the focused commotion she would witness when we walked into the room--three nurses, several techs, a senior resident physician, a pharmacist, a respiratory therapist, and several others all scurrying in their efforts to help her husband, who would be lying on his cot in the middle of all of this activity.

I pulled back the curtain to the room and walked in, surprised to see that CPR was not currently in progress. I introduced Gary's wife to the team and guided her to Gary's side before seeking out my chief resident as to what transpired in the last few minutes. It seemed that right before we had entered the room, Gary's heart rhythm had switched from asystole to ventricular tachycardia, another life-threatening rhythm. However, this rhythm responded to our team's electrical shock and Gary, still unresponsive, now had a faint pulse accompanied by a normal sinus rhythm. After being down for forty plus minutes, this was nothing short of a miracle. A well-timed miracle corresponding to his wife, on her knees in the family room, pleading with him to hold on.

“\textit{This was nothing short of a miracle.}”
We encouraged her to talk as much as she wanted to her husband.

And so she did. With tears brimming her reddened eyes, she remained near her husband's left ear, continuously whispering her hushed encouragements and pleas while stroking his hair. Soon after, her son and the patient's brother also were escorted in to be with the patient. Their expressions of disbelief as they walked into the room were heart-breaking.

We called the cardiology team who, after arriving at this patient's bedside in minutes, prepared to take him to the cath lab. Unfortunately, his outlook was tenuous. I was skeptical, after 45 minutes of resuscitation, if Gary would have a positive outcome. Even if he survived, there was no predicting how mentally capable he would be after such a long time in cardiac arrest. If not to survive, why else would he be hanging on?

Suddenly, I thought back to Gary's wife dropping to her knees, begging for a last chance to talk with her husband. I thought of Gary and how, out-of-the-blue, he suddenly regained a faint pulse after multiple failed previous aggressive attempts to jump-start his heart. I looked at his wife, his brother and his son currently holding Gary's hands and whispering their loving words into his ear.

Was this the reason?

I was searching for some sense in this nonsensical situation. Possibly, I realized, I might have been over-analyzing the whole situation, trying to understand how Gary could possibly still be alive. Quite frankly, though, after 45 minutes without a pulse, Gary should not have been successfully resuscitated. Was the whole reason of Gary's lingering due to something beyond our control--the fates cooperating to let his wife and family have several more minutes with him? For proper goodbyes? Or was it because his body really was responding to all of our heroic measures and would heal itself with our modern interventions?

I was eager to know how our efforts would be interpreted by fate. Watching Gary being wheeled down the hallway, from Room 17 to the cardiac cath lab, with his family by his side, I was hopeful that there might be just a sliver of a chance at his full recovery. If not, though, just seeing his family have the opportunity to be with him, to speak to him, to accompany him so he wouldn't be alone during his passage, was enough of an explanation for me.

I got my answer when I returned for my scheduled shift the next day.

Although Gary had still been alive at the end of my previous shift, he never regained consciousness. Per Cindy, he peacefully passed soon after, in the evening, surrounded by his loving family.

He had hung on for all the right reasons...

Editors Note: StorytellERdoc is an ED physician who also happens to be a very talented writer in his spare time. He shares his stories via blog format and has been very gracious to let us republish some of his incredible stories here in The Fast Track. Stay tuned for more submissions by him and please visit his site to read more from this talented scribe!
Have you ever noticed that some of the most interesting things that happen in an emergency department somehow manage to trickle in during the most inappropriate time? Take for example, during shift change or when the resources in your emergency department are stretched so thin you wonder how you are ever going to get through all the charts in the rack.

This makes me think back to a case in late summer of a 22 year old young woman that presented with cramping abdominal pain. It was single doctor coverage and I had arrived about one hour prior for my night shift at medium volume community emergency department. I was fending off the eleven o’clock surge of patients and trying to get the waiting room down to a reasonable number and disposition the patients from the prior shift that I inherited.

The triage nurse walked down the hallway with a young women moaning as her mother followed behind as I sat charting at my computer. She was placed in the room right in front of my station, but I only had time to glance up for a second before I hurried off to the next patient. As I walked back to the nurse’s station I heard more and more moaning coming from the young women’s room. “What is going on in there?” I asked Anne, the patient’s nurse. “She has abdominal cramping” Anne said.

Just then the patient’s mother came out of the room and requested a doctor come into the room. Anne picked the patients pregnancy test off the counter and said she was also pregnant. I asked if the patient knew she was pregnant and Anne said, “She does now”.

I placed some orders for my prior patient and then I headed into the young lady’s room. When I got into the room, she was bent over standing at the edge of the bed squeezing the mattress with both hands and her mother was sitting in a chair next to her trying to comfort her. I could not help but notice the obvious gravid abdomen on her petite 100 pound frame.

“Hello, I am Dr. Calvert. What has brought you to the emergency department?”
The young lady said she started to have abdominal pain about four hours prior to arrival and was “leaking clear fluid”. I asked her if she knew she was pregnant and she shook her head no and said she had a “normal period two months ago”. She said “there is no way I am pregnant” and then looked over to her mother. I asked her if she had ever been pregnant and she shook her head no and repeated “there is no way I am pregnant”.

I did a quick physical exam noting how large and firm her abdomen was and then placed a bedside ultrasound on her abdomen. There was no difficulty seeing a large fetal heart pumping away on the screen. Either this young lady had the largest 8 week old fetus in history or she was in denial of the growth occurring in her abdomen. I turned to her mother and asked if she had noticed her daughter’s abdomen getting larger and if she thought she may be further along than 8 weeks. Her mother turned to me and said “Today I thought she was gaining weight and I asked her if she was pregnant.”

Anne got the young lady positioned on the bed so I could do a sterile exam. In between the patients moaning and writhing around in the bed, I could feel a little baby’s head. She was not crowning yet but I knew it would not be long. I told the young lady not to push and we were going to get her up to labor and delivery.

She shouted, “Why am I going to labor and delivery?”

“Because you are about to have a baby” I stated.

A caravan of emergency medicine staff rushed the young lady through the emergency department back elevator doors to labor and delivery with her mother trailing behind in disbelief.

I went back to my computer to chart, shaking my head at what had just happened the past thirty minutes. There was continuous chatter from the emergency department staff about how could she not know she was pregnant. As I looked up at the computer, I noticed that the waiting room had doubled in size and I was far, far behind.

About two or three hours later after I had cleared the waiting room and the emergency department was manageable again, I told the staff I was going to run up to labor and delivery to see what had happened. I first saw the obstetrician when I turned the corner to the OB floor. She said that the baby was delivered about ten minutes after coming from the emergency department and she weighed 6 pounds and 8 ounces. I asked her how far along the patient was and she estimated about 36 weeks.

It was hard for me to get into the patients room because of all the family members but when I did she was laying in bed holding a healthy baby girl in her arms. As I looked around at all the family members, I noticed they all had the “deer in headlights” look that the patient had when I told her I was sending her to the OB floor to deliver a baby. I wished the patient and her family good luck and I headed back down stairs to see how the next drama would unfold in the emergency department.

Editors Note: Dr. Calvert is an emergency medicine physician who is a clinical instructor at Wake Forest University Department of Emergency Medicine and the Assistant Director at Wilkes Regional Medical Center Emergency Department. One of the founding members of the WVSOM ACOEP-SC, he continues to contribute to the molding of young emergency medicine physicians.
A Reflective Investigation on Global Health and Emergency Medicine

Nicholas C. Reis, OMS II
New York College of Osteopathic Medicine

Over the last several decades - more so than any other time in history - the world has become increasingly interconnected, with globalization affecting nearly everyone on the planet. Increases in the flow of people, products, services, and information between and among countries and continents are having a dramatic influence on the world's health and health care delivery. These influences have had both positive and negative implications. Advances in technology and communication help spread awareness of health disparities, new best standards of care and quality improvement techniques. Meanwhile, increased global migration of people and products heighten the risk of communicable disease, enabling the outbreak of public health threats in one part of the world to quickly spread and impact the health and economy of others far away. As a result, “international” or “global” health has evolved into a multi-disciplinary field where trained individuals from different professions – medicine, education, engineering, politics, economics – cooperate to address the many challenges to world health. Physician participation and leadership in global health initiatives seems obvious or even expected, but what may seem less obvious is involvement of emergency physicians in particular.

A proportionately significant number of ER physicians currently participate in global health work. Interest amongst these specialists has grown to the point where international health fellowships are being introduced by EM training programs nationwide. Why are EM physicians so interested in global health? In my opinion, there are several possible explanations. More than any other specialty, emergency physicians bear witness to health disparities. People of lower socioeconomic status and minorities suffer higher
morbidity and mortality rates, and are more likely to seek out care only when their condition is severe enough to require an emergency room visit. The poor and uninsured often use the emergency room as their sole source of care. Witnessing such disparity on a regular basis can be galvanizing, and may serve as an impulse for pursuing opportunities to enact change in countries where whole communities are disparaged. Emergency physicians also have a wide scope of practice. According to Dr. Edward Gotfried, Director of NYCOM’s Center for Global Health, “They (emergency physicians) have the ability to recognize and react, with limited resources, to a wide variety of pathology. This provides mobility on a global scale.” The comfort EM physicians develop with working in less than ideal situations lends itself to the extremes of working in resource-poor countries. Maybe EM physicians migrate toward international health work because of a desire to feel more attached to the rest of the world. The nature of EM is not conducive, in most cases, to developing long-lasting relationships with patients. However it does afford physicians the time and opportunity to pursue an avocation. It is not surprising then that - with their skill set and desire to effect longer lasting change - many pursue mission work.

All considered, it could be argued that emergency medicine physicians should be pursuing global health work. Work in disparaged and under-served parts of the world stands to benefit both their communities and their own practice. More than any other specialty, EM physicians are prepared to step into the chaotic and limited practice environments found in third-world countries. They are trained to be versatile and use what they have available; to quickly adapt to new situations. This is demanded to new extremes in the global health arena. All these things together give EM physicians an edge in global medicine. Many elect to pursue specialty training in fields such as disaster medicine, tropical medicine, and EMS. All have practical value in working with developing nations. “Specialty training in EMS systems is of particular importance in countries where EMS doesn’t exist”, says Dr. Passafaro, emergency medicine physician at St. Barnabas Hospital in the Bronx, and veteran of medical mission trips all over the world. “Especially so in countries where transport times are long. In South Africa, for example, paramedics are trained in resuscitation and stabilization for prolonged periods. It can take hours, in some cases, to get critically ill from rural, isolated communities to definitive care. The establishment of organized and effective EMS systems is a major contribution EM physicians stand to make in underdeveloped countries.” Training in disaster relief is of obvious benefit to those countries unfit to respond to events that weaken or even paralyze social, political, and health care infrastructure.

As much as EM physicians can contribute to international health efforts, they stand to gain as much if not more. The benefits in terms of technical experience, clinical skills, and personal reward are significant. “All EM residents should be made to attend global health rotations as a part of their internship period”, argues Dr. Deborah Lardner, another global health veteran, and faculty of NYCOM’s EM department and Center for Global Health. “But then again, I’m biased. I believe the interdisciplinary nature of international work lends itself nicely to the emergency room environment. You are not a stand-alone practitioner; you rely on the contributions of other professionals within and outside the medical field. You also find your practice changes for the better. You become a much more confident and competent physician. You learn to trust in and rely more on your history and physical, and avoid wasteful medical practices”. Exposure to diseases rare in the U.S. also stands to benefit the practice of EM physicians. Despite low incidence of diseases such as Chagas, TB, Dengue Fever, and SARS, familiarity will allow prompt identification and treatment of those cases. This is vital to preventing disease outbreaks here in the states, an ever-increasing possibility with current trends in global mobility.
Considering the relationship between emergency medicine and global health has left me with several questions. Where does the emergency medicine community stand on issues involving global health? Is there, or should there be a unified, established movement to stand at the forefront of international health efforts? Despite the increased interest and participation in global health initiatives, involvement is non-compulsory, and so awareness of the personal and professional benefits have not translated into a push for universal exposure. Is this an area where the ACOEP can make a difference? What, if any, role should the college play to increase participation of osteopathic emergency physicians in this business of global health? Whether others realize it or not, third-world medicine is here in the United States. It’s in the rural poor and uninsured populations everywhere. If osteopathic identify themselves with a holistic approach to medicine, and the treatment of the “whole”, shouldn’t this include greater emphasis on considerations of community, even global health issues?

Visual Diagnosis
Answer: Herpatic Whitlow

“Rad” Diagnosis
Patient Presents:

- Patient has a history of GERD
- Recently the symptoms associated with the reflux have increased
- X-rays are taken. (On next page, answer on Page 17).
PA’s in the ER
By Manuel Portalatin, OMS-II

There are many roles that fall under the heading of “Allied Health”. I have found that not many students from other disciplines really grasp the depth of this. Personally, I didn’t have much exposure to allied health until working in an ER as a tech before starting medical school. With patient ER visits on the rise it is important now more than ever to understand the scope of medical practice. We must know as well as understand the limitations and strengths of the professionals we are working with. Emergency medicine is much more of a team sport than a solo endeavor, and the best patient care often comes from a strong staff with clearly defined roles. Given this fact, it is important to bring some attention to an asset available to ER physicians, a role that has been growing in recent years: the PA.

The Physician Assistant field is continuously growing. As the patient load continues to rise in emergency rooms, the number of PAs is also increasing. As an OMS-2 at NSUCOM, I have had quite a bit of interaction with PA students through shared involvement in various activities in the EM club. In medical practice, however, I really don’t have much experience working with PAs. Therefore, I thought it would be helpful to investigate what the role of the PA in the ER is and where the PA field is heading. To accomplish this I spoke with Professor Troy Elmstrom, who is an instructor at the NSUCOM PA Program and a 2000 NSUCOM PA Graduate.

In my short talk with Professor Elmstrom, he told me that the scope of the PA is really based on which doctor the PA works with, even if that PA has more experience in a specific area. In other words, despite extensive cardiology experience in one practice, a PA may not be able to practice the same skill set if the physician he or she is working with doesn’t use those skills. Professor Elmstrom additionally described the process as being dependent upon the staff and the level of trust the PA gains in working with them. The more trust that is present, the smoother things will operate, and the more the patient benefits.

He also said that the range of skill a PA has is always capped by the scope of the practice, which can vary based on the state. In Emergency Medicine the PA can perform many of the procedures that an ER physician can. The abilities of an ER PA include history taking, ordering and interpreting diagnostic tests, diagnosing conditions, formulating treatment plans, suturing, ordering consults, and prescribing and administering medications. Are there disagreements between PAs and ER docs about which procedures, meds, and other points of care should be given? Sure there
Professor Elmstrom has had a great amount of experience working with ER physicians, and he indicated to me that it has been a positive experience with few power struggles or shows of dominance. To him, the roles of the PA and the physicians are different, but they always support each other when it comes to patient interaction. As far as the future of ER medicine with regard to PA staffing, Professor Elmstrom definitely thinks that more and more PAs will be coming in, especially with the health care changes being made in the upcoming years.

PAs can provide quick care for less cost to the hospital, so instead of hiring another ER physician, a hospital may opt to hire more PAs. In the state of Florida, up to four PAs can be supervised by a single physician. Even though this may make it seem like PAs are displacing physicians from ERs, bear in mind that patient numbers will steadily rise with the new health care bill, and PAs must work through a physician, which offsets the rise in PA staffing somewhat. So, to my fellow medical students graduating and obtaining ER residencies in the next few years, don’t be surprised to see a larger PA representation in the ER.

PAs are not considered “physician-lite” as far as I can tell. They provide a valuable supplemental role in collecting patient histories at the same level physicians do, and they commence the work-up, which is helpful in the chaotic environment that characterizes most emergency rooms. The final decision in a patient’s care does rest with the physician and not the PA. Professor Elmstrom pointed out that this distinction is fundamentally important. While that may be true, it is also worth mentioning that an opinion about a patient’s health from an experienced individual should always be heard, especially if the patient can benefit. In the end, isn’t the patient experience what brought us all into medicine in the first place? An appropriate end to this article could involve a sandbox/playground analogy, but instead I will end it like this: let’s continue getting along, treat each other with the respect we earned by obtaining our degrees, and most importantly let’s save some patients.
Residency Highlight

The Emergency Medicine Residency

- The EM residency program is 25 years old. In 2011, we will graduate our 100th resident! 28 strong, we are the largest residency program in the hospital.
- We have all EM board certified attending faculty. On average, have been here for 15 years. They are here because they like to teach!
- Botsford boasts a 98% first-time AOBEM board pass rate!
- We're part of the MSUCOM Statewide Campus System and attend monthly educational Grand Rounds and frequent EM procedure workshops.

Are your residents successful at finding good jobs?

Our residents are successful in finding jobs of their choice. Past residents are employed in excellent jobs across the US, from Alaska to New York!

Guatemala Medical Mission

Botsford partners with DOOR International for an annual medical mission trip to rural villages surrounding Antigua, Guatemala. In 2010, the group treated approximately 3,000 patients. All EM residents are offered the opportunity to participate and are encouraged to go!

For further questions please contact Residency Director: Dr. Jackie McParlane 248-471-8806
SPRING SEMINAR in SCOTTSDALE, ARIZONA
April 12th through April 14th

Events:
- Leadership Academy
- Jeopardy Hosted by Residents
- Program Director’s Panel
- Lectures
- Mass Casualty Lab
- OMT for Attendings

For more information contact: Drew Kalnow - akalnow@gmail.com
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Can Emergency Medicine Residents Reliably Use the Internet to Answer Clinical Questions?

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Internet searches, medical informatics, clinical information sources, reliability

**Abstract:**
Introduction: The study objective was to determine the accuracy of answers to clinical questions by emergency medicine (EM) residents conducting Internet searches by using Google. Emergency physicians commonly turn to outside resources to answer clinical questions that arise in the emergency department (ED). Internet access in the ED has supplanted textbooks for references because it is perceived as being more up to date. Although Google is the most widely used general Internet search engine, it is not medically oriented and merely provides links to other sources. Users must judge the reliability of the information obtained on the links. We frequently observed
EM faculty and residents using Google rather than medicine-specific databases to seek answers to clinical questions. Methods: Two EM faculties developed a clinically oriented test for residents to take without the use of any outside aid. They were instructed to answer each question only if they were confident enough of their answer to implement it in a patient-care situation. Questions marked as unsure or answered incorrectly were used to construct a second test for each subject. On the second test, they were instructed to use Google as a resource to find links that contained answers. Results: Thirty-three residents participated. The means for the initial test were 32% correct, 28% incorrect, and 40% unsure. On the Google test, the mean for correct answers was 59%; 33% of answers were incorrect and 8% were unsure. Conclusion: EM residents’ ability to answer clinical questions correctly by using Web sites from Google searches was poor. More concerning was that unsure answers decreased, whereas incorrect answers increased. The Internet appears to have given the residents a false sense of security in their answers. Innovations, such as Internet access in the ED, should be studied carefully before being accepted as reliable tools for teaching clinical decision making. [West J Emerg Med. 2011;12(4):442–447.]

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Can Emergency Medicine Residents Reliably Use the Internet to Answer Clinical Questions?

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Methods: Two EM faculties developed a clinically oriented test for residents to take without the use of any outside aid. They were instructed to answer each question only if they were confident enough of their answer to implement it in a patient-care situation. Questions marked as unsure or answered incorrectly were used to construct a second test for each subject. On the second test, they were instructed to use Google as a resource to find links that contained answers.

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INTRODUCTION

The clinical environment in the emergency department (ED) encompasses a wide range of clinical problems. The scope of information needed is therefore broad, and decisions are often made under time constraints. Textbooks are the traditional real-time reference source for emergency clinicians. When time constraints are less critical, information can be obtained in greater depth from medical libraries by using texts, journals, proprietary databases, and professional information specialists. Most EDs provide easy Internet access, and Internet literacy among physicians is commonplace. It is therefore not surprising that emergency clinicians increasingly turn to the Internet as a rapidly accessed and up-to-date source for real-time clinical information.

The perception that the “latest” information is available rapidly via the Internet makes it an attractive information source. Although the Internet’s dynamic nature makes it impossible to assess the exact amount of information available,
Information is typically obtained by using an Internet search engine (ISE) to sort through the vast content available. The ISE Google indexes the greatest number of pages and is the most frequently used ISE by the general public. In February 2008, an estimated 5.9 billion searches originated on Google. This represented 59.2% of all searches. Despite the ease of obtaining information on the Internet, no systematic validation of the information occurs. This is of concern, particularly when searches are unstructured and the information obtained potentially influences medical care and therefore patient safety.

Although many, if not most, computers located in clinical areas maintain links to a variety of medical indices, our observation was that clinicians at our institution also used Google and other general ISEs. In designing a study to focus on the accuracy of finding answers on the Internet, we chose to focus on a single ISE to simplify the objective. The primary objective of the study was to determine the accuracy of emergency medicine (EM) residents’ answers to clinical questions when using Google as an ISE.

**METHODS**

This nonblinded prospective study was designed to determine whether EM residents could identify accurate clinical information by using Google to search the Internet. The study design focused on a single ISE and a single testing sequence common to all of the subjects. The number of residents in the program at a given time is 36; other designs with subgroups taking different tests or using different search resources would have resulted in inadequate statistical power to draw meaningful conclusions. The study was approved by the university institutional review board.

The subjects were residents from an EM residency program. The EM residency has 12 residents per year in a 1- to 3-year format. Residents from all 3 classes during the year 2007 through 2008 were eligible to participate on a voluntary basis. The residents were informed that their decision to participate and performance in answering study questions would not have an impact on their academic standing. The study plan was presented at Grand Rounds 1 week before the study, and all volunteers signed consent forms before participation.

The test, consisting of 71 questions, was developed by 2 of the authors (R.K. and R.M.), who are residency faculty. The questions were clinically oriented and challenging, simulating questions that come up in day-to-day clinical ED practice. They were open ended, and an attempt was made to make them as unambiguous as possible (Table 1). Sources used to verify answers varied, depending on the question. For information on topics not subject to much change over time, we used EM texts such as Rosen’s, Tintinalli, and Harwood Nuss. For more-recent topics, we used peer-reviewed journals, including *Annals of Emergency Medicine* and *Academic Emergency Medicine*, as well as other EM and non-EM journals. Other sources for current information included Web sites, such as the Centers for Disease Control, American College of Emergency Physicians Clinical Guidelines, and eMedicine. Answers were agreed on by both faculty members and validated from 1 or more references. The answers were then considered the gold standard for the study.

The subjects initially completed a demographic questionnaire that included age, gender, year of training, as well as questions about computer and ISE use and familiarity. Each subject was assigned a 3-digit study number, known only by the study team. This provided anonymity for study subjects.

Subjects were given the 71-question test in a written, closed-book setting. This was referred to as the PreTest. Participants were asked to attempt to simulate the real-life ED environment where time is limited. A guideline of 5 minutes per question was suggested but not given as a strict limit.

Subjects were asked to answer questions to a reasonable degree of clinical certainty, defined as sufficient confidence to use the information in a clinical setting. The answers were scored as correct, incorrect, or unsure (not sufficiently confident).

The authors scored each PreTest, comparing the subject’s answers with the standardized answers. Answers were judged to be incorrect when they were either clearly factually wrong or where, in the authors’ opinions, the response given would have caused a medical error if implemented in a clinical setting. The 2 EM faculty discussed questionable answers to decide on correctness. The result was used to create an individual test for each subject, consisting of the questions that had been answered incorrectly or as unsure on the PreTest. The second test was referred to as the Google Test.

Subjects were given their individual Google Test 1 week after the PreTest. This part of the study was conducted in the hospital library computer lab. Subjects were instructed to answer the questions with the help of a computer, using only Google as the ISE. They could then link to whichever sources, including other medical indices, provided by their Google search to obtain the information necessary to answer the question. Subjects were allowed to perform multiple Google searches for individual questions. The participants were once more instructed to use 5 minutes per question as a guideline and to answer the questions as “unsure” if they were not clinically confident of the answer. They were also instructed not to use any search engine other than Google. The individual subject’s answers to the Google Test were then scored as before (correct, incorrect, or unsure).

Key logging software captured the search strategy used by the participants. The software tracked how the residents conducted their searches, which ISE features they used, and how much time they spent on each Web page. Whereas it is likely that most Google searches would identify links with accurate clinical information within the vast number of links identified, the ability of the residents to identify accurate information correctly from those search results is key to determining the correct answer. The information obtained from
the key logging software is being evaluated by 2 of the team members (D.G.S. and J.A.) with expertise in Library Science and Information Science. These results will be presented in a separate article.

The responses to the demographic questionnaire included gender, age, residency year, and several questions regarding computer use and familiarity with using computer resources. The results were scored by using 5-point Likert scales.³,⁴

For both the PreTest and the Google Test, the faculty members reviewed the residents’ answers. Based on the previously validated answers, they were marked as being correct, incorrect, and unsure. These were then totaled for each test and entered into the study database. The overall percentage correct, incorrect, and unsure were then determined for each test.

The primary outcome measure was the percentage correct on the Google Test as an indicator of the accuracy of Google searches to answer clinical questions.

The answers to the demographic questions and the results of the PreTest and Google Test are presented as descriptive variables. The percentage correct answers on the Google Test were then compared with the results of the demographic questionnaire in a univariate fashion as categoric variables by using logistic regression to look for associations between the demographic responses and successful Google searches. All tests were 2-sided and tested at an α level = 0.05 for significance.

RESULTS

A total of 35 EM residents consented to participate in the study. One resident, who was a study investigator, was ineligible to participate. All 35 residents completed the PreTest. Thirty-three completed the Google Test. Two were unable to complete the Google Test because of scheduling problems.

The overall results for the PreTest were 32% correct, 28% incorrect, and 40% unsure (Figure 1). The range of correct answers was 16% to 49%. After removing the correctly answered questions, the participants were given their individual Google Tests. The number of questions per resident ranged from 37 to 60, with a median of 49. On the Google Test, 59% (95% confidence interval, 56% to 62%) of the questions were answered correctly, 33% incorrectly, and 8% unsure (Figure 2). The range of correct answers on the Google Test was 36% to 72%.

The results of the demographic questionnaire are presented in Table 2, along with the P values for their association with the
The results of our study demonstrated a surprisingly low rate of accuracy for EM residents answering clinical questions by searching Google. The 59% accuracy rate on the Google Test would be unacceptably low if used in a clinical setting. Equally surprising was the 33% incorrect answer rate by using Google searches. We repeatedly emphasized to the participants that they should answer “unsure” unless they were confident enough of the answer that they would use it in a clinical setting. In fact, on the PreTest, “unsure” was the highest percentage response. However, on the Google Test, the residents marked “unsure” for only 8% of their answers.

The implication is that the residents were overconfident of the information obtained from the Internet. The residents had seen the questions previously on the PreTest and were aware that they were being given the questions again because they were either initially unsure of the answer or had given an incorrect answer on the PreTest. It is surprising then that they would be so confident in their answers on the Google Test. The confidence presumably stems from a perception that the Internet is a reliable source of information.

We also undertook to study the search strategies used by EM residents. The results and analysis of our findings with respect to search strategies will be reported subsequently. The questions used in the study were based on the kinds of information the authors look for daily in their clinical practice and that they have observed EM residents seeking in the clinical setting. We believe the questions are clinically relevant to day-to-day patient care in an ED in the United States. The “correct” answers were determined by 2 experienced American Board of Emergency Medicine certified physicians in active academic clinical practice and were verified by referring to peer-reviewed information sources. Both physicians were sufficiently confident in the accuracy of the answers that they would use the information in clinical practice. Similarly, the EM residents were instructed to answer PreTest and Google Test questions to a degree of certainty that they would feel comfortable using the information for patient care. No strict time limit was placed on EM residents taking the PreTest or the Google Test. Rather, we asked them to spend as much time as they would spend when working in a clinical area. We expected residents to spend approximately 5 minutes per question. They were instructed to use the time either to find an answer that met their internal criteria for clinical certainty, or, as in the “real world” of the ED, to give up using Google and either seek a different source of information or pursue an alternate course of patient care. Thus, we have attempted to include a naturalistic

<table>
<thead>
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<th>Variables</th>
<th>Median on 1–5 scale</th>
<th>P value</th>
</tr>
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<td>0.04</td>
</tr>
<tr>
<td>Confidence in using a search engine</td>
<td>4</td>
<td>0.05</td>
</tr>
<tr>
<td>Confidence in finding relevant medical information on the Internet</td>
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<td>0.03</td>
</tr>
<tr>
<td>Confidence in reliability of the medical information found on the Internet</td>
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<td>0.03</td>
</tr>
<tr>
<td>Frequency of searching for clinical information</td>
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<td>0.21</td>
</tr>
<tr>
<td>Frequency of using Internet-obtained information for clinical decision making</td>
<td>4</td>
<td>0.48</td>
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Figure 2. Google Test results.
element into what could be best described as a laboratory exercise.

Google is the most popular ISE and is 1 of the most commonly used sources of clinical information by emergency physicians. Google indexes Web pages based largely on relevance and popularity. Search results ranking by Google do not depend on the accuracy of the retrieved information. The results are displayed in an order determined by the Google proprietary PageRank algorithm. PageRank, a copyrighted process owned by Stanford University, is licensed exclusively to Google. Google's description of PageRank reads as follows:

PageRank relies on the uniquely democratic nature of the Web by using its vast link structure as an indicator of an individual page's value. In essence, Google interprets a link from page A to page B as a vote, by page A, for page B. But, Google looks at more than the sheer volume of votes, or links that a page receives; it also analyzes the page that casts the vote. Votes cast by pages that are themselves 'important' weigh more heavily and help to make other pages 'important.'

Google also does not index the entire Internet. Much information resides in proprietary databases, and older information may not exist in an indexed digital format. The result of a typical Google search consists of many Web pages, each with a list of 10 search results ranked in order as determined by PageRank. Most searchers use results from the first few pages, even though a query often returns hundreds of thousands or even millions of results. The user, particularly those with limited time, may never view most of the links. Because the links are not ranked based on the accuracy of the contents, it would not be unusual to view links with incorrect information. Thus, it is logical to question the accuracy of the information obtained as a result of initiating a search on Google.

Very little research has been published concerning the accuracy of Google medical searches. An article by Tang and Ng looked at using Google as a "diagnostic aid." In that article, the authors searched Google for terms they selected from published case records, which they designated "diagnostic cases." From the first 3 to 5 pages of results returned by Google, the authors selected the "three most prominent diagnoses that seemed to fit the symptoms and signs." If 1 of these 3 diagnoses was correct, they regarded the Google search as providing the correct diagnosis. The authors concluded that it is often useful to "Google for a diagnosis," although they acknowledge that many limitations to their findings exist.

Although the types of information emergency physicians and residents seek during clinical shifts has not been widely studied, we have observed in our own clinical practice and teaching that many of the information queries were not for the purpose of arriving at a global diagnosis, but rather for specific pieces of information that would be useful in patient care. Examples are drug doses, drugs of choice for specific indications, characteristics of diagnostic tests, frequency of certain findings in a disease state of interest, acceptable treatment alternatives, and so on. This also differs considerably from what Tang and Ng studied. In addition, we sought to design a study with a much more definitive and clinically relevant standard for search accuracy. Little is known about the strategies used to search the Web by EM residents. The study of Graber et al is the only reference that specifically addresses this issue, and the object of that study was not concerned with the accuracy of results.

The survey we conducted before administering the tests asked the residents questions regarding their confidence in using computers in general, searching for medical information, and in the reliability of the information retrieved. Each of these parameters had correlations between the level of confidence and the percentage of correct answers on the Google Test. However, other questions, such as how frequently one conducts searches for answers to clinical questions and how frequently answers retrieved from such searches are actually applied in real clinical situations, did not have correlations with the percentage of correct answers. This seems to imply that a group of residents, although less confident than their peers, still conduct and apply the results of these Internet searches in clinical practice. This subgroup also has a higher likelihood of not getting the correct answer from their search and not recognizing that the answer is incorrect.

It is clear that our subjects often retrieved inaccurate information by using Google, yet the residents believed that the information was reliable enough to use in patient care. This may represent a previously unrecognized source of medical error and a threat to patient safety. Many possible explanations exist for this finding. As others have pointed out, the degree of prior knowledge of a subject may influence search strategies and also influence the searcher's ability to arrive at an accurate result. Interestingly, no correlation was found between residency year and Google Test accuracy. However, given the number of residents per year and the wide variability in other types of test scores within a given year, the lack of correlation is not that surprising.

Our research suggests that searchers who scored higher on the PreTest also scored higher on the Google Test. This finding raises serious questions about whether teaching EM residents to conduct more effective searches will enable the residents to have a higher success rate in answering clinical questions by using an ISE such as Google. In many respects, the outcome can have both favorable and unfavorable consequences. Training and education generally result in improved performance, but these findings also indicate that efforts also should focus on improving the residents' knowledge base. The combined protocol could result in searches that produce a higher percentage of correct answers when using an ISE to answer a clinical question. The results also suggest that a more experienced physician, such as an
attending physician, may be more capable of finding the correct answer to a question by using an ISE because of his or her advanced knowledge base and experience. Concomitantly, ED patients and family members, lacking medical knowledge, are vulnerable and more likely to find erroneous medical information when using an ISE to search the Internet.

LIMITATIONS
This was a laboratory study; therefore, caution should be used in translating the results to the clinical setting. In clinical medicine, checks and balances are in place on the use of information; these are not present in the computer laboratory. Pressures to answer questions accurately, as well as time constraints, are different. The actual extent to which residents rely on information from Google searches is not known. Residents may use multiple sources of information and choose between them, based on their prior knowledge and the presumed credibility of the source.

Despite our questioning of residents’ use of Internet searches for clinical information and instructions to answer “as if the answer were to be implemented in patient care,” no way exists to prove that the answers on the test would translate into actual medical-care errors. No ethical method is known to set up a study in which clinical questions are searched on a computer and then implemented in a real patient-care setting. Our laboratory simulation sought to control the wide variability of the Internet and yet still provide a meaningful estimate as to whether residents can find accurate answers.

Google Scholar (http://scholar.google.com/) is the beta version of a product first released in 2004. It indexes scholarly literature, including peer-reviewed articles, preprints, conference abstracts, theses, and so on. The results of Scholar searches may be more accurate than searches of the general Web using Google, but this has not been verified, and the extent of Google Scholar use by EM residents has not been studied.

CONCLUSION
Technologic innovations, such as Internet access in the ED, should be studied carefully before being accepted as a reliable tool for assisting with clinical decision making. Residents should be instructed to select Internet resources that provide valid, reliable health information. Enlisting the assistance of a health sciences librarian in providing search-strategy training to residents, medical students, and attending physicians can overcome many of the associated pitfalls.

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Conflicts of Interest: By the WestJEM article submission agreement, all authors are required to disclose all affiliations, funding sources, and financial or management relationships that could be perceived as potential sources of bias. The authors disclosed none.

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Tattoos and Piercing: A Review for the Emergency Department Physician

Western Journal of Emergency Medicine, 12(4)

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Keywords:
Tattoo, piercing, pocketing, complications, emergency medicine, body modification

Abstract:
Tattoos and piercings are increasingly part of everyday life for large sections of the population, and more emergency physicians are seeing these body modifications (BM) adorn their patients. In this review we elucidate the most common forms of these BMs, we describe how they may affect both the physical and psychological health of the patient undergoing treatment, and also try to educate around any potential pitfalls in treating associated complications. [West J Emerg Med. 2011;12(4):393–398.]

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Tattoos and Piercings: A Review for the Emergency Physician

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INTRODUCTION

Tattoos and piercings (T&P) are ancient practices of body modification. The word tattoo comes from Polynesia and was first described by Captain Cook in 1769. The art form was named for the tapping noise made by a tattoo needle on the skin, which in the native tongue was tatau or tatu.1 Piercing, including the ear lobe, is also an ancient process, defined as the insertion of a needle to create a fistula for decorative ornaments. First recorded in the Middle East more than 5 thousand years ago, the practice is mentioned in Genesis 24:22 when Abraham asks his older servant to find a wife for his son Isaac. One of the gifts given to Rebecca, Isaac’s new wife, by the servant was a golden earring. Since then, ear piercing has become so well accepted that most scientific literature excludes the ear lobe in the definition of body piercing.

Social acceptability of these practices varies widely from culture to culture. Catholicism and Judaism have banned the practice of tattooing.2 Esthetics, personal expression, religious views, communication, and style are all motivations for obtaining a tattoo or a piercing. Once relegated to the margins of society (bikers, military, sailors), tattoos and piercings are now common across all ages and both genders in what has been described as an epidemic. For the emergency physician (EP), tattooing can be used to camouflage intravenous drug abuse, where it involves the antecubital fossa, and has an important place within generalized medical therapy. Its use is seen as a camouflage for dermatologic disease, can be added as a final stage in many plastic reconstructive procedures, and is the lifestyle or social background of their patients, to be able to understand the medical complications that may arise as a result of body modification, and to have a deeper understanding of the psychologic associations of tattooing and, when necessary, the relevance of the body modification to the current chief complaint.

EPIDEMIOLOGY

Within Western society there has been a shift from the stereotype of the tattooed sailors, who used tattoos to communicate their travel and services, the outsider biker of the 1960s (Hell’s angels), and the gang members of the 1980s to the ornamental tattoo, which is now part of a collection of body modifications among women as much as men. Recent surveys completed in 2002 and again in 2006 have shown an increase in prevalence in tattoos within the US population.5,6 In 2002, a Harris poll showed a tattoo prevalence of 16%, whereas in 2006 a North American survey of 18 to 50 year olds found that 24% had tattoos and 14% had body piercings (excluding the ear). The surveys found that those who were tattooed were more likely to be less well educated, to have a high recreational drug use, and were less likely to show any religious affiliation.

Tattooing can be used to camouflage intravenous drug abuse, where it involves the antecubital fossa, and has an important place within generalized medical therapy. Its use is seen as a camouflage for dermatologic disease, can be added as a final stage in many plastic reconstructive procedures, and is...
also used for guidance in radiation therapy, endoscopic surgery, and ophthalmologic procedures.

Studies, which have looked at the epidemiology of piercings, have found that 2% of Americans report having piercings (not including the ear lobe) and that females get more piercings than men. Among young adults who have piercings there is a high rate of associated eating disorders.7 Studies also show that persons who get piercings are more likely to partake in risky activities, including drug taking and sexual promiscuity, and have a higher risk of incarceration. The educational status and income of persons with T&P are generally lower, although these educational and economic disparities are lessening as T&P becomes more mainstream (Table 1).8,9

MEDICAL RELEVANCE FOR THE EMERGENCY PRACTITIONER

There are several ways that T&P are relevant to the practicing emergency practitioner (Table 2).

Interpretive Relevance

For the EP, T&P presents a window to the lifestyle and life experience of the patient. Many questions relevant to the history can be answered by a review of the T&P present. Figures 1 through 4 show examples of information obtained from T&P. While interpretation is not as simple as it was 30 years ago, when sailors, military members, and gangs had the most tattoos, relevant information is often within reach of the observant EP.

Complications of Tattoos

Tattoo complication rates show a prevalence of approximately 2% to 3%. Table 3 summarizes the complications associated with tattoos, many of which will be encountered by EPs. Most complications are related to infection that can be traced back to individual tattooist practicing a nonsterile technique. In particular, the jail and intravenous drug-using population is at risk for hepatitis B and C and methicillin-resistant Staphylococcus aureus infection.10–12. Even syphilis has been transmitted by a tattoo artist licking the tattoo needle.13 Failure to recognize a tattoo as the source of a complication leads

Table 1. Piercing terminology.9

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampallang</td>
<td>Horizontal through the penis</td>
</tr>
<tr>
<td>Antitragus</td>
<td>Ear and cartilage</td>
</tr>
<tr>
<td>Barbell</td>
<td>Type of jewelry composed of a straight bar with bead on each end (found anywhere)</td>
</tr>
<tr>
<td>Christina</td>
<td>Mons pubis</td>
</tr>
<tr>
<td>Conch</td>
<td>Adjacent to external auditory canal</td>
</tr>
<tr>
<td>Finger web</td>
<td></td>
</tr>
<tr>
<td>Frowney</td>
<td>Lower lip</td>
</tr>
<tr>
<td>Guiche</td>
<td>Male perineum</td>
</tr>
<tr>
<td>Hafada</td>
<td>Lateral scrotum</td>
</tr>
<tr>
<td>Labret</td>
<td>Lips</td>
</tr>
<tr>
<td>Madonna</td>
<td>Labret upper lip</td>
</tr>
<tr>
<td>Prince Albert</td>
<td>Transurethral piercing from urethral meatus to below glans penis</td>
</tr>
<tr>
<td>Reverse Prince Albert</td>
<td>Ring exits on top of penis</td>
</tr>
<tr>
<td>Smiley</td>
<td>Upper lip frenulum</td>
</tr>
<tr>
<td>Triangle</td>
<td>Clitoral hood</td>
</tr>
</tbody>
</table>

Table 2. Medical relevance of tattoos and piercings (T&P)

<table>
<thead>
<tr>
<th>Relevance of T&amp;P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interpretive: understanding the patients and medically relevant aspects of their lifestyle</td>
</tr>
<tr>
<td>- Incarceration</td>
</tr>
<tr>
<td>- Drug use</td>
</tr>
<tr>
<td>- Sexual orientation</td>
</tr>
<tr>
<td>- Gang allegiance</td>
</tr>
<tr>
<td>2. Complications of T&amp;P, resulting in the ED visit</td>
</tr>
<tr>
<td>- Embedded</td>
</tr>
<tr>
<td>- Infectious</td>
</tr>
<tr>
<td>- Trauma</td>
</tr>
<tr>
<td>3. Relevance to the medical work-up in the ED</td>
</tr>
<tr>
<td>4. Psychiatric association</td>
</tr>
<tr>
<td>5. Procedural related</td>
</tr>
<tr>
<td>- Airway</td>
</tr>
<tr>
<td>- Magnetic resonance imaging</td>
</tr>
<tr>
<td>- Plain films</td>
</tr>
</tbody>
</table>

ED, emergency department.

Figure 1. “LW” is a gang affiliation meant to be seen when wearing sandals.
to incorrect therapy. In many cases the tattoo is not correctly linked to the medical problem because the patient may have multiple risky behaviors.

Complications of Piercings

Complications of piercings are more common than those of tattoos and studies show rates as high as 9%. The types of complications include local or systemic infections, traumatic insertion, poor cosmesis, and rejection of foreign body, as well as migration and embedding. These are summarized in Table 4.

Jewelry is mainly body-site specific and made from metal. Metals used include stainless steel, gold, titanium, and various alloys. When these alloys contain nickel, there are associated allergic skin reactions and contact dermatitis. Specific

Figure 2. Mi vida Loca = My crazy life also seen as in many patients; in this case, “LOWCA” is a reference to low riders and the automotive culture associated with them. The gang is “Lowell Street,” indicating a traditional Hispanic “turf gang” that is “loco”—crazy or brave.

Figure 3. Jiminy Cricket shown (a derogatory reference to the Crips, when called crickets or crabs), with the lipstick mark from a woman who loves him. The N and the E probably refer to northeast and the Chinese characters are of uncertain reference.

Figure 4. “Brown Pride” for racial identity as Hispanic or Latin; the antecubital fossa tattoos often cover intravenous drug abuse tracks, and the woman (right arm) is often the woman who “waits for him” during jail time. Yolanda is his girlfriend, and the left antecubital fossa tattoo is a tribute to a family member in the military, killed in service with “R.I.P.”, or rest in peace, noted above.
Some authors have attempted to show positive association for these body modifications. In a study of women with eating disorders, the authors suggested that body piercing could be seen as reflecting a positive attitude towards the body, an expression of care.23 In addition people with piercings are more likely to give attention to their physical appearance and are less likely to be overweight than people without piercings.22

REMOVAL OF TATTOOS AND PIERCINGS

Burris and Kim24 found that 50% of persons with tattoos express regret and wish for tattoo removal. The quest for tattoo removal reflects earlier poor decision making and an embarrassing stigma often perceived by the age of 40 years. Tattoos may cause immediate and delayed hazard to health and are not easy to remove. Delayed complications include development of allergic, hypersensitivity, or granulomatous reactions that require tattoo removal.25 On average, tattoo regret

respectively.21 Skegg22 noted that piercing was more common among women rated as having low constraint or high negative emotionality and was less common among those with high positive emotionality. Therefore, one can conclude that body piercing and tattoos, especially in females, could be a sign of suicidal behavior. However, no association has been found with eating disorders.7

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occurs 14 years after tattooing and has spawned a whole new industry. Nonprofit organizations also provide tattoo removal to gang members wishing to remove their tattoos (www.homeboy-industries.org). Tattoos can be removed by mechanical, chemical, or thermal methods.

Alternatives to permanent tattoos include the Indian technique of staining the skin with henna. This will fade over a period of 7 to 10 days. In the past year there has been the development of nonpermanent tattoo ink. This technique uses ink-containing beads that are deployed in the same method as used previously. However, the ink can be fully removed by single-pass laser treatment (www.freedom2ink.com) that dissolves the bead, allowing the dye to be exposed to enzymes, laser, and UV rays.

**SUMMARY**

Tattoos and piercings have become widespread practices that enjoy greater social acceptance than ever before. Body modification is important to the EP because it provides information about the “patient.” The physician can learn a great deal about these patients via their body modification, including information of immediate relevance to their medical evaluation. Secondarily, T&P are directly responsible for an increasing number of emergency department visits due to both immediate and delayed complications. The EP armed with knowledge about T&P/body modifications can forge more functional doctor-patient relationships, obtain critical historical data, and provide better treatment and referral for this patient population.

**REFERENCES**


**Table 5. Summary of specific piercing and/or pocketing complications by anatomic location.**

<table>
<thead>
<tr>
<th>Body Modification</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral piercings</td>
<td>Airway compromise following tongue swelling or jewelry obstruction. Dental trauma: 10% of those with tongue piercings experience enamel trauma.</td>
</tr>
<tr>
<td>Ear piercings</td>
<td>Complications are particularly associated with high piercings (above the ear lobe), of which 77% will have some minor infection and 43%, an allergic reaction. Perichondritis, in particular with pseudomonas, can be difficult to treat and may result in permanent disfigrement.</td>
</tr>
<tr>
<td>Nasal piercings</td>
<td>Are either through the alar or septum, leading to septal hematoma or a perichondritis of the nasal septum.</td>
</tr>
<tr>
<td>Nipple piercings</td>
<td>These have a 2- to 4-month recovery time and cause local abscesses, cellulitis, and may interfere with the ability to lactate.</td>
</tr>
<tr>
<td>Genital piercing</td>
<td>In men, can result in priapism, paraphimosis, and urethral strictures and in women can cause bleeding, infections, and scarring. The genital piercing of both sexes interferes with all barrier contraceptive methods and has been shown to cause the local spread of sexually transmitted diseases.</td>
</tr>
</tbody>
</table>

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**Conflicts of Interest:** By the WestJEM article submission agreement, all authors are required to disclose all affiliations, funding sources, and financial or management relationships that could be perceived as potential sources of bias. The authors disclosed none.
ED crowding is still an ongoing problem, despite all the research and knowledge on how to relieve crowding.

One of the most effective ways of relieving this problem in the United Kingdom (UK), was instituting what was known as the four-hour target. This was a nationwide policy to all hospitals to move patients out of the ED within 4-hours, either by discharge or having them admitted and in an inpatient bed. There were exceptions with certain patients and the hospital had to do this 98% of the time. This policy was instituted by the Department of Health in the UK and not only announced the stated policy, but created the Modernization Agency and used government resources to support hospitals to comply.

According to a number of research articles, the outcome was largely positive and effective. The reason this was so successful, was because it was a plan that was contingent upon the entire hospital and the entire nation to comply. It was not only up to one department in a large hospital to try and relieve the problem of crowding, but the whole hospital worked to make it happen. Inpatient beds, no matter what, had to be available for patients that were admitted. It wasn’t just the ED trying to move patients by making their own systems more effective and efficient. When a patient was admitted, they just didn’t sit and board in the ED, but were actually moved to an inpatient bed. Not only was the collaboration of the hospital...
important, but also the fact that this was a na-
tionally instituted plan that followed through
with resources to lay infrastructure to do this.
Unfortunately in the U.S., ED crowding is still
an ongoing problem, despite all the research
and knowledge on how to relieve crowding.
Policies have been made, but not implemented.
CEO’s of numerous hospital don’t realize the
benefit of up-staffing inpatient wards to keep
the flow from occluding in the ED. Many
down-staff, which further exacerbates the
problem. Collaboration through the entire hos-
pital is typically not seen and there is not na-
tional plan or policy being instituted in the
U.S.

The problems seen in the ED can be an
example or a window to the greater problem of
our health care system. In a study reported in
Annals of Emergency Medicine in 2008, the
increase in patients seen in the ED is not from
the uninsured, but rather those who have a pri-
mary care doctor. This shows the inadequacy
of the health care system and that patients can-
not get the care they need from primary care.
This could be for a number of reasons from the
inadequate resources of primary care or the
time it takes to get an appointment when care
is needed in a more timely manner. We also
see the enormous charges and costs associated
with ED visits. This is due to the financial
snowball effect when patients cannot afford to
pay and the lack of reimbursement from insur-
ance companies and Medicare forcing increas-
ing costs in the ED. From 1996 to 2004 reim-
bursements in EDs decreased from 57% to
42%. In 2004, private insurance companies
still only paid 56% of charges.

Just as problems seen in one particular
aspect of our health care system can give us a
sense of a growing national problem, solutions
that have proven effective can also serve as an
to bettering the health care system in
the U.S. Taking the example of ED crowding,
there is plenty of evidence-based medicine that
shows the root of the problem and ways of fix-
ing it. In the UK a policy was instituted that
involves the entire system of management, ra-
ther than one aspect that is limited without the
involvement of the other systems, was very
effective. Invoking the entire hospital, rather
than one department that relies on the rest of
the hospital and invoking the entire nation,
with the induction of the National Health Ser-
vice Plan (the four-hour target) by the depart-
ment of health is truly needed. Just as there
are solutions and evidence on an international
level to relieving emergency department
crowding, there are plenty of examples and
evidence to improving health care in the U.S.
There are at least 36 other nations that have
better systems than the U.S. according to the
World Health Organization. Many nations
with better health care systems can serve as
eamples of improvement. Nations that have
socialized medicine and single payer systems
for example are doing quite well, so taking
them as models of evidence is what we should
be doing. We should look to the fact that re-
lieving the system of excess bureaucracy that
puts great strain on the system would decrease
costs substantially and smooth the adminis-
trative inter-workings. Again looking to the ex-
ample of the UK, because health is adminis-
tered by a central body, policies such as the
four-hour target, can be implemented across
the entire nation and resources of the nation
can be utilized to help the hospitals that need
it.

There is enough data out there to know
that the system set up in the United States is
not the best one. If we take the evidence that is
out there and implement what works, we can
obtain better results. The leg work for many
problems has been done. Although the hurdles
of implementation are large, the willingness to
change and create structural changes is what is
needed. We know that we do not have to rein-
vent the wheel. So lets take what is already out
there and just get on with it.
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Student Chapter Highlight: Starting a New ACOEP-SC Chapter

BJ Burns, OMS-II at WCUCOM

Being a member of the first matriculating class at a new school comes with both challenges and opportunities. One of these opportunities is becoming the founder of a campus organization. The Student Chapter of ACOEP at William Carey University College of Osteopathic Medicine (WCUCOM) began at the same time as the Student Government Association. We share a rare distinction with a few other organizations as being chartered by the dean prior to the founding of the SGA.

At the beginning we contacted the national ACOEP-SC President and held an interest meeting to determine if anyone wanted the club. The response was better than any of us could have expected. We then wrote the constitution and bylaws before setting up a meeting to elect officers. We based the constitution on an example supplied by the national officers. A few minor changes were made once our SGA was established to meet school requirements. At our second meeting we elected officers and ratified our constitution. In retrospect the process would have been smoother had we set up interim officers to establish the rules for election and membership. At our third meeting we began planning a suture clinic for our first official club function. This being the first student organization function we had several hoops to jump through before being allowed to host the clinic. The dean required that we submit a curriculum for the clinic as well as hosting a knot tying lab at least one week before. In addition to this we participated in a few fundraising events with the recently formed pediatrics and family practice clubs. We ended the year with a banquet for members and the professors who had helped us out through our inaugural year.

Over the summer three of our officers joined officers from the family practice club and professors in becoming CPR/First Aid instructors in order to help teach the incoming class. We have had officers attend the past two conventions and recently elected new officers for the coming year. In the end it has been a very successful learning process for all of us.
Pimpology 101
Top things to know on your EM rotations
By: Megan S. McGrew, DO, MBA, MS

Q: Name two criteria that determine necessity for C-spine X-ray in trauma?
A: NEXUS and CCR

Emergency departments treat millions of trauma patients annually who are at risk for C-spine injury; however, only a small portion of these has fractures.

Due to the potential for catastrophic morbidity if injury is missed in the C-spine and the fact that clinical findings of this area in a patient with blunt trauma are extremely unreliable, various criteria have been developed to help define when imaging is necessary.

Imaging is definitely indicated in the patients who exhibit neurological deficits consistent with a cord lesion, have an altered sensorium from head injury or intoxication, complain about neck pain or tenderness, or have significant distracting injuries.

For those cases that are not so clear-cut, two clinical decision-making criteria have been developed to allow clinicians to “clear” low risk patients of c-spine injury, to avoid unnecessary imaging.

NEXUS
(National Emergency X-Ray Utilization Group)
1. No Midline Cervical Tenderness
2. No Focal Neurological Deficits
3. No Altered Level of Consciousness
4. No Evidence of Intoxication
5. No Painful or Distracting Injuries
If any 1 of the 5 is present, an X-ray is needed.

The Canadian C-Spine Rule
For short (C-SR) the C are clearly more reliable when combined with neck in extension

1. Ray High-Risk Factor Which Mandates Radiography?
   - Age < 65 years
   - Drowsiness or confusion
   - Paraparesis or paraplegia

2. Ray Low-Risk Factor Which Allows Safe Assessment of Range of Motion?
   - Simple recent VSI
   - Focal sensory loss in ID
   - Ambulation after fall
   - Delayed onset of neck pain
   - Absence of a fall or other trauma

3. Able to Actively Rotate Neck?
   - 45° left and right

In several studies, including a prospective cohort study out of Canada that was published in the New England Journal of Medicine (2003), the CCR is found to be more sensitive and specific than the NEXUS. These findings support that the CCR criteria would result in lower unnecessary radiography and decrease the chance of missing an injury.

PEARL: There are two groups of patients whom you have to be weary of cervical instability despite any trauma: RA and Downs Syndrome.

See you next Fast Track for another common pimping question...
~ Megan S. McGrew
100% Program Challenge

The Foundation for Osteopathic Emergency Medicine introduces the 100% Program Challenge, an annual competition that seeks to discover which residency training program can raise the most money for the Foundation for Osteopathic Emergency Medicine.

Rules

- The competition will run from January 1, 2012 – December 31, 2012. Contributions received after the deadline will not be counted.
- In order to qualify, the residency program must have 100% participation — that means every single resident in the program must contribute at least $5.00 to the challenge.
- Checks must specify “100% Program Challenge” on the memo line in order to be counted for the competition.
- A list of current residents that have contributed must be included with the check. If a list is not included that accounts for all residents in a program, 100% participation cannot be determined and the program will not be eligible to win.
- In order to make this competition fair to residency programs of all sizes, the winner will be chosen based on the average donation per resident. This number will be determined by dividing the total donation from the residency program by the number of residents in that program. It is not the total amount that counts, but the average per resident. ($500 from a program with 20 residents = $25/resident > $500 from a program with 25 residents = $20/resident).

This is a fun competition that encourages first time donors to get involved with the Foundation’s mission. For more information, please contact Stephanie Whitmer at (312) 445-5712 or at swhitmer@foem.org.
ACOEP-SC Research
Competitions & Presentations

Questions? Contact me:
Suleman Ahmed
Research Committee Chair
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Upcoming opportunities to share your research contributions with your peers!

Over the next year, ACOEP-SC offers three distinct opportunities to showcase your research. You may even win a prize in the process.

Case Poster Competition
Conduct a case study of an interesting case and present it in poster format at the ACOEP Spring Seminar in April 2012. This competition is open to all ACOEP resident and student members.
Applications are due January 31st, 2012

Student Research Series
This is an opportunity to provide your peers with an oral presentation of your research contributions. Presentations will be given in PowerPoint Format and students will be allowed approximately 15 minutes each. This is open to all ACOEP-SC members who have participated in research related to Emergency Medicine.
Submission Deadline is March 1st, 2012

Written Case Competition
Like the Case Poster Competition, this involves case study research. First, second and third place awards will be given. The first place winner will be provided hotel accommodations and airfare to present their case study at the Fall 2012 Scientific Assembly. This competition is open to third- and fourth-year students.
Submission Deadline is typically in early May 2012 (Official deadline TBD)
Images from the Fall 2011 ACOEP-SC in Las Vegas, NV.
Thanks for Reading!

Jonathan and I just wanted to thank you all for reading our first issue of the new and improved Fast Track. A lot of hard work and time went into trying to make this publication a better product for the ever-improving ACOEP-SC. While I am not sure either of us knew exactly what we were getting ourselves into, we both had an incredible time gathering submissions from fellow students, residents, and physicians!

While both of us had an extensive background when it came to writing and editing, neither of us had been in the trenches when it came to putting together a full publication. Needless to say, it was a bit of a learning process but we are proud with the results. We hope that throughout the next year we can continue to develop and propel The Fast Track to bigger and better heights with each issue. If you have any suggestions or comments, please feel free to email us at any time.

Sincerely,

Tanner Gronowski and Jonathan Donahue, Co-Editors