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Missouri Medicine

The Journal of the Missouri State Medical Association - Since 1904

Volume 112 | Number 3 | May/June 2015 www.msma.org/MissouriMedicine

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ON THE COVER

Tort Reform: Mission Accomplished! From left: Jeffrey Patrick, MD, MSMA President Elect Ravi Johar, MD, Donald Miller, MD, Dave Hawkins, DO, George Carr, MD, and Denise Tritz, MD. Governor Jay Nixon is signing MSMA's tort reform bill.

On May 7, Governor Jay Nixon signed into law SB 239, MSMA's tort reform bill. His signature brought to an end three years of a hard-fought offensive to restore limits on non-economic damage awards in lawsuits alleging medical negligence.

In 2012, the Missouri Supreme Court vacated the previous $350,000 cap, and left the state with no limit whatsoever. MSMA immediately formed a coalition of like-minded allies to pursue legislative remedy, and SB 239 is the product of that effort.

The law creates two caps on non-economic damages; a primary limit of $400,000, and a higher cap of $700,000 for "catastrophic" injuries (which are tightly defined). Both are subject to an annual index of 1.7% for inflation.

The Missouri State Medical Association expresses deep gratitude to bill sponsors Senator Dan Brown and Representative Eric Burlison, and to our four physician legislators Senators **Rob Schaaf, MD**, and **Bob Onder, MD**, and Representatives **Keith Frederick, DO**, and **Jim Neely, DO**.

MSMA wishes to express its undying gratitude for the extraordinary grassroots help from you and your physician colleagues across the state. This could not have happened without you.

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About *Missouri Medicine*

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Owned and published since 1904 by the Missouri State Medical Association. *Missouri Medicine*, *the Journal of the Missouri State Medical Association* [ISSN 0026-6620], is published bi-monthly at 113 Madison Street, Jefferson City, Missouri 65102. Periodicals postage paid at Jefferson City, Missouri and at additional mailing offices. Postmaster: Send address changes to Missouri State Medical Association, c/o Membership Dept., P.O. Box 1028, Jefferson City, MO 65102. Copyright 2015 by the Missouri State Medical Association. Printed by the Ovid Bell Press, Inc., Fulton, Missouri. The subscription price per year for non-members is $75.00. Annual subscription for members is included in the annual membership dues. Single copies are $12.00 and the per copy cost of the annual August Directory is $50.00.

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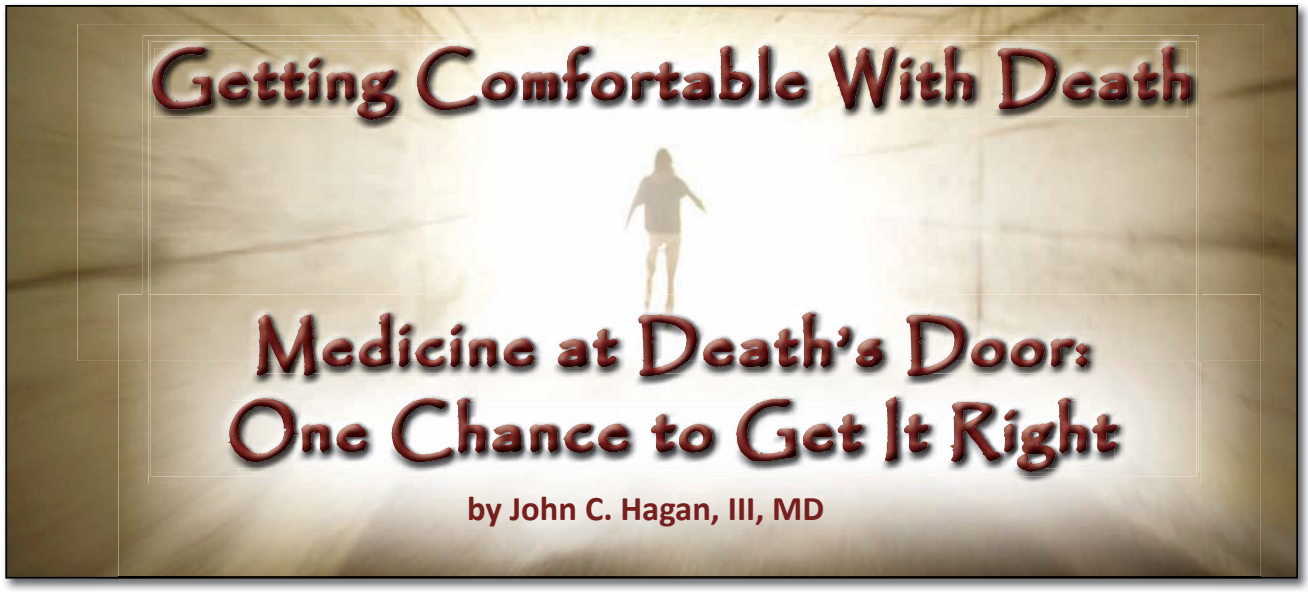
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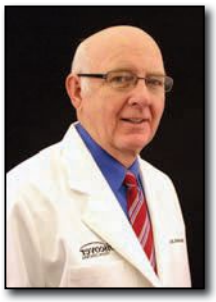
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This "Getting Comfortable With Death" series has constituted a thorough and comprehensive discourse in care of the dying patient. *Missouri Medicine* thanks all of our authoritative contributing authors, and hopes readers will incorporate these best-practices into their clinical skills.

"It kills me sometimes how people die."
-The Book Thief, Marcus Zusak

While, for most developed countries, life-expectancy continues to increase it will never reach infinity. Sooner or later, we can all still expect to die. Ultimately all our patients will also die in spite of our excellent care and the magnificent advances of modern medicine. As physicians will personally experience the aging and death of our parents and older kith and kin. If we don't die young, we will watch ourselves and our generation become superannuated and pass away.



John C. Hagan, III, MD, FACS, is a Kansas City ophthalmologist and *Missouri Medicine* Editor since 2000. He is a multi-year Super Diamond Contributor to MMPAC.
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A palpable sense of our own mortality will become ever more difficult to ignore. Ultimately it will prevail over the belief that we will remain young forever and that the hour of our death is a long time in the future. Our personal attitudes about death may affect how we treat our dying patients, and may even cause us to go into medical and surgical specialties where interaction and care of the dying are infrequent.

The certainty of death is the basis of religion and our greatest innate fear. In the past physicians often did not tell patients they had a life-limiting disease and death was near. Once physicians could not do more to cure or sustain life the dying patient was often neglected, their emotional and physical needs unmet. A dying patient was once viewed as a failure of medicine rather than an opportunity to help the patient and their family to experience what has become to be called "a good death." As a profession we have come to accept our responsibility for expertise in end-of-life care.

With this issue we close our "Getting Comfortable With Death" series that began with the September/October 2013 issue of *Missouri Medicine.* As I outlined in my introduction editorial "Medical Metaphysics: What is a Good Death?" medicine is making major advances in care of the dying patient and emotional support for their

family and friends. This series has constituted a thorough and comprehensive discourse in care of the dying patient.

The inaugural article (September/October 2013) by Ken Murray, MD, was a reprint of one of the most widely read articles on death ever written: "How Doctors Die: A Model For Everyone?" The original article went viral on the internet, no doubt because the general public still greatly respects physicians and is extraordinarily interested in what physicians opt for in their own death process. The answer provided by Dr. Murray and his case reports: quality over quantity of life, a pain-free death devoid of futile end-of-life care, dignity in dying. Doctors do not want "everything possible done;" they don't wish to be resuscitated when death is eminent; they want to die at home immersed in the love and presence of family. Dr. Murray does believe that too much futile, expensive, and often painful end-of-life care is still practiced while hospice care is underused.

In an original follow up article (November/October 2013) "The Good Death: Dying to Get It Right," Dr. Murray outlined modern society's changing attitudes towards death and reviewed the history of death rituals. Death was once the accepted terminus of the circle of life. Now death and the rituals of dying have been sequestered and commercialized to the point that death is often an uncomfortable topic for many patients and their physicians to discuss. He posits the need for better protocols for hospitals and emergency medical services that often use mandatory resuscitation protocols even in the most futile and inappropriate instances. He introduces our readers to the subjects of advanced medical directives, palliative care and hospice services.

The wide-spread awareness that "the good death" is as pain-free as possible included the Review Perspective "Acupuncture: A Western Physicians Experience" in the January/February 2014 issue by Thomas G. Johans, MD. In the hands of a specially trained physicians acupuncture is a useful adjunct to treating many types of pain.

Physicians and patients must live by the law but also now must die by the law. Harvey Tettlebaum, JD, and J. Andrew Billings, MD, presented detailed summaries of relevant health care law in March/April 2014, "The Culture Change of Life and Death: Will Health Reform, Demographics and the Economy Bring It About?" Included were the Patient Self Determination Act, Medicare law, the Patient Protection Affordability Care Act, cultural changes and patient expectations and the legal right to: pain relief, participation in decisions regarding life-sustaining measures, palliative care and hospice. A helpful explanation of the Physician Orders for Life-Sustaining Treatment was included. Finally, the ethical and legal questions about when to cease life sustaining measures such as assisted respiration or parenteral alimentation in the face of brain death were presented with frank admission that the existing body of law provides no always defensible and/or clearly defined answers for physicians and hospitals.

Pamela J. Honeycutt, MD, PhD, and Denise Bickel, PhD, agree that "Palliative Care Begins At Home." (May/June 2014). "Palliative care is multidimensional care of patients with life-limiting diseases concurrent with active disease management, together with support for their care-givers. Components of primary palliative care include management of physical and psychological symptoms and discussions about goals of care and end-of-life wishes. Primary care physicians and all specialty physicians should provide primary palliative care for their chronically ill patients." Providing palliative care is now a standard of care and both a duty and privilege for physicians. Harmful shibboleths such withholding potent narcotics for pain relief at end-of-life for fear of "becoming addicted" have thankfully been dispelled in the hospital and hospice setting. For out-patient pain management it remains problematic.

Paul E. Tatum, III, MD, Kevin W. Craig, MD, Karla T. Washington, PhD, and Debra Parker Oliver, PhD, reviewed the "Evolution of the Care of the Dying Patient." (July/August 2014) Paraphrasing their abstract they provided an overview of the historical evolution and ongoing transformation of care for the dying patient. They examined the rise of hospice and palliative care and discussed the need for earlier palliative care for the seriously ill. They

"It is difficult to accept death in this society because it is unfamiliar. In spite of the fact that it happens all the time, we never see it."
-Elisabeth Kubler-Ross MD

"When your time comes to die, be not like those whose hearts are filled with fear of death, so that when their time comes they weep and pray for a little more time to live their lives over again in a different way.
Sing your death song, and die like a hero going home."
-Chief Tecumseh

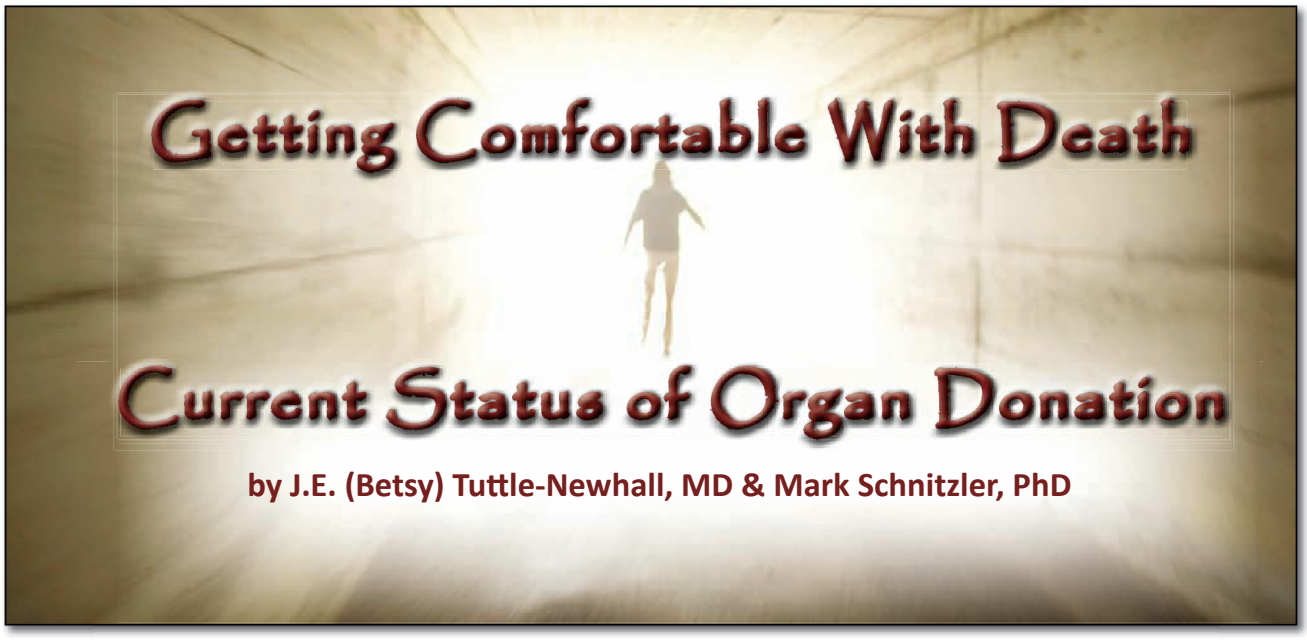
considered future challenges in end-of-life care as health care changes over time. They concluded quoting Dame Cicely Saunders, "You matter because you are, and you matter to the end of your life. We will do all we can not only help you die peacefully, but also to live until you die."

The special needs of dying children and their parents were addressed by the faculty of Children's Mercy Hospital (CMH) of Kansas City. Jennifer S. Linebarger, MD, MPH, in "When the Beginning and the End Are Close." The article in the September/October 2014 issue noted Missouri has five pediatric palliative care programs, one in Kansas City, one in Columbia, and three in St. Louis. The goal of the American Academy of Pediatrics is for specialized pediatric palliative care teams to support children, families, and health care providers "for all children with serious life-threatening and inevitably life-shortening conditions." In a companion article by CMH faculty Drs. Carter, Pitts, Linebarger, Garrett, and Lantos, "Our Answer to Belgium: Palliative Care for Children is Preferable to Euthanasia," they eloquently demolish any legitimate reason for a country or state to enact law countenancing pediatric euthanasia. Noting that modern pediatric palliative care can eliminate pain and suffering in the dying child, they note, "Our resistance to euthanasia is rooted in a view of medicine where 'healing' and 'relief of suffering' are the pre-eminent goals for health care professionals and patients alike. In prioritizing these goals, the medical traditions are in harmony with many religious traditions." Pediatric euthanasia to this Editor is unethical and opens the door to eugenic judgments and abhorrent practices.

When I was an intern at Milwaukee County Hospital, an eight-year-old child was brought to the emergency department. He was riding his bicycle with friends when struck by a speeding automobile. His injuries were massive, and he died shortly after arrival. His distraught parents arrived at the ER and were placed in a waiting area. None of the ER team was prepared or able to tell this young couple their beautiful son was dead. A staff faculty physician conveyed the death message with less care and tact than the situation deserved. The unpleasant but extremely important task of physicians telling family and friends that their loved one has died, sometimes unexpectedly, was reviewed by Angela M Bogel, MD, and Steven Go, MD. "Breaking Bad (News). Death-Telling in the Emergency Department" (January/February 2015). Thankfully the mechanics of empathetic death-telling are now part of the training of emergency physicians and other relevant specialties. As the authors state, "Notifying family of the death of a loved one is never easy. In many ways the surviving family members of the deceased become victims themselves in the immediate period following the notification. Physicians should learn to view survivors as their patients too and take the necessary steps to reduce the potential complications of this life-altering event."

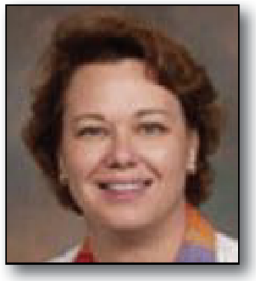
Organ donation - you can't take it with you so why not leave it behind? A living testimony to the generosity of the dead is their transplanted organs in the life-sustaining hearts, kidneys, lungs, livers of fortunate recipients. In this May/June 2015 issue the last of our "death" series fittingly JE (Betsy) Tuttle-Newhall, MD, and Mark Schnigler, PhD, review "Current Status of Organ Donation." They note "It is estimated that 18 patients die daily waiting for organ transplants due to organ failure. Due in part to the disparity between supply and demand, the potential exists for ethical tensions between the caring physician and surgeon team's advocacy for their patient and the family at the end of the patient's life, and the process of organ donation." Noting the ethical and legal rigor that must be maintained in securing organs they review: the 'organ gap,' first person consent, process of organ recovery and the delicate subject of conflict of interest between the donor's physicians and the recipients' transplant team.

Missouri Medicine thanks all of our authoritative contributing authors to the "Getting Comfortable With Death" series. We remain committed to publishing articles on this vital subject. When it comes to helping our patients have a good death there are no mulligans or second chances; death will always be a one-act drama. **MM**



"..Know death for what it is: The in-breath of God" [1]

It is estimated that 18 patients die daily waiting for organ transplants due to organ failure. Due in part to the disparity between supply and demand, the potential exists for ethical tensions between the caring physician and surgeon team's advocacy for their patient, and the family at the end of the patient's life, and the process of organ donation.



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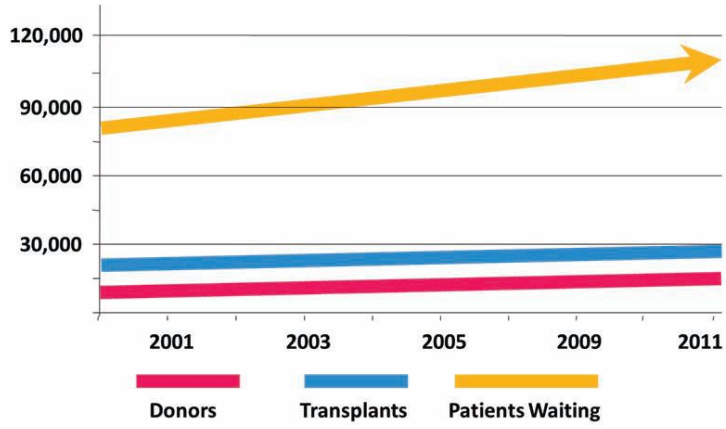
Abstract

Organ and tissue donation are options at the end of a patient's life. Physicians and surgeons should have no direct role to play in the solicitation of organ donation and consent for organ recovery from the family of either a brain dead patient or a neurologically devastated patient. Certainly organ and tissue donation, and transplant procedures are life-saving and life-changing for many patients with organ failure and life-altering conditions. Due in part to the disparity between supply and demand for these resources, the potential exists for ethical tensions between the caring physician and surgeon team's advocacy for their patient, and the family at the end of the patient's life, and the process of organ donation. In this article, we will discuss the evolution of the legislative landscape for organ donation in the past decade, the concept of first person consent and its implications, the process of recovery and finally concerns regarding issues of conflict of interest regarding the handling and processing of the donor gift.

Introduction

Many choices face us as individuals and as family members during the process of our own or our loved ones deaths. The issues that arise during these transitions have more to do with the "how" the process of death occurs and less about the reality that death will occur. In this last article in this series for the *Missouri Medicine*, the status of the process of organ donation at the end of life will be discussed.

Figure 1
Patients Listed for Transplant vs. Donor Organs Available: United Network of Organ Sharing 2013.



Physicians and surgeons should have no direct role to play in the solicitation of organ donation and consent from the family of either a brain dead patient or a neurologically devastated patient; however, physicians and surgeons do have an obligation to their patients and their families to ensure that the consent process for donation is voluntary, informed, and obtained in a robust fashion.[2] Certainly organ and tissue donation, and transplant procedures are life-saving and life-changing for many patients with organ failure and life altering conditions. Unfortunately, despite widespread changes in the Organ Procurement Organization (OPO) community and adoption of a series of "best practices" put forth by a national improvement effort lead by U.S. Department of Health and Human Services Health Resources and Services Administration Office of Special Programs (HHS/HRSA), Division of Transplantation from 2003-2008, there remains a large gap between patients in need of organ transplants and organs available from all sources – donation after cardiac death (DCD), brain dead donors and living donors. Due in part to wider application of transplantation and increasing rates of renal failure in the population, the addition of waiting list registrants has far outstripped organ availability.

It is estimated that 18 patients die daily waiting for organ transplants due to organ failure. (See Figure 1.)[3] Due in part to the disparity between supply and demand, the potential exists for ethical tensions between the caring physician and surgeon team's advocacy for their patient, and the family at the end of the patient's life, and the process of organ donation. There exists a fine line between advocacy for organ donation, and acknowledging that the donor is a real patient who is in the process of dying or dead, leaving behind a family often in shock and grieving. Most OPOs currently report that they have abandoned the use of the concept of presumptive consent (if one is not already present) and are "aware and thoughtful" of both the donor, donor family, and the impact of donation on the potential recipient; however OPOs remain in compliance with the Centers for Medicare and Medicaid Services (CMS) Conditions of Participation (COP) based largely on their conversion of eligible donors to consented donors (i.e. the volume of organs recovered) as opposed to quality measures of organs recovered or performance of those organs in the recipient.[4, 5] We will discuss the evolution of the legislative landscape for organ donation in the past decade, the concept of first person consent and its implications, the process of recovery and finally concerns regarding issues of conflict of interest regarding the handling and processing of the donor gift.

Evolution of the Legislative Response to the Organ "Gap"

Due in part to the gap in supply and demand, as well as historically low family consent rates especially in some demographic categories, laws, and regulations have been crafted in the last decade to maximize the potential for organ donation across the United States. Historically, the United States has been an "opt in" society for organ donation, as opposed to some European countries, where organ donation is an "opt out" option. In many surveys, the majority of Americans are generally in favor

of the idea of organ donation. The legislative process has tried in part, over time to reflect the public's stance on organ donation.

In 1968, the Uniform Anatomical Gift Act (UAGA) was the first law enacted to provide the legal foundation for the donation of human organs and tissues for the use in transplantation. Over the next 40 years, more legislation followed as transplantation became a viable therapeutic option for patients with organ failure. These included the 1980 Uniform Determination of Death Act (which defined brain death as legal death), and in 1984 the National Organ Transplant Act (NOTA) which established the role of HHS/HRSA in supplying grant support for the Organ Procurement and Transplant Network (OPTN) and the Scientific Registry of Transplant Recipients – a database established to track organ recipient outcomes post-transplantation.[6] In 2006, an amendment was made to the UAGA stating that life-sustaining treatments could not be withheld or withdrawn from a patient until suitability for organ donation was determined. Unaltered, this legislation adjustment would have forced physicians and surgeons to treat patients aggressively potentially against their advanced directives and potentially their family's wishes.

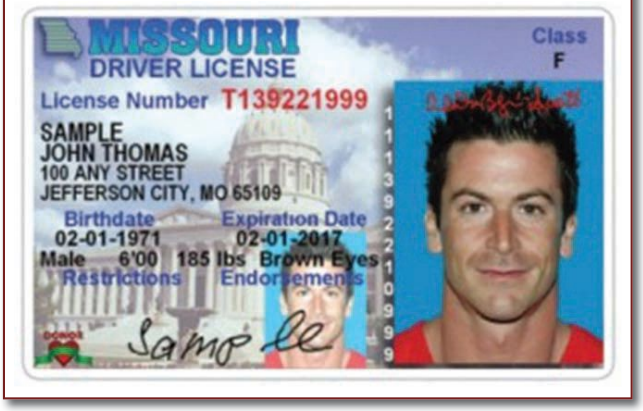
After an outcry from ethicists and professional societies, the Amendment was revised.[7, 8, 9] Per CMS Hospital COPs, as of 1998 and revised in 2004, CMS makes hospitals accountable for their donation programs in an effort to increase the number of organs and tissues available for transplantation. These regulations include notification of the OPO in a timely fashion for all patient deaths, imminent notification of death for those patients who may qualify to become organ donors and strict definitions of who can and who cannot approach families in situations without first person consent, for consent for organ donation. These include language requiring consent for donation be obtained by only an OPO staff member. These COPs also prescribe that donor suitability for donation can only be determined by OPO personnel.[10]

First Person Consent

The UAGA has always given the OPOs the legal foundation to retrieve organs from patients listed on a donor registry, and has presumed that the presence of the donor name on a registry as first person consent for donation. First person consent in Missouri, from the potential donor, can be supplied legally via a will, a donor card, an authorizing statement (such as a symbol placed on a driver's license) or an oral statement to two adult witnesses (See Figure 2). Revoking the "consent" for donation in Missouri requires the potential donor to sign a new document stating the revocation, an oral statement witnessed by two adults, a change in the will, destruction of the prior document or informing the state HHS that you do not want to be included in the registry any longer.[11] The argument for the priority of first person consent as opposed to family consent in the UAGA, is that family's should not have the ability to revoke the decision made by the potential donor during his or her lifetime; however, as Truog argues in his 2012 article, individuals who consent to donation and are placed on a registry, often make this decision at a Driver license bureau or Department of Motor Vehicles (DMV) and are not fully informed or counseled regarding their decision at the time they register.

It is unclear that the process of "informed consent" at the DMV includes a consistent and transparent discussion of what donation involves or the implications for the potential donor families and care providers at the end of the donor's life. The question of "do you want to be an organ donor?" hardly represents the process of informed consent of a living patient that physicians and surgeons are required to pursue in robust fashion from individuals prior to much less invasive procedures than organ retrieval;[8] however, it could be argued that what happens to a patient after death, should have a different standard for informed consent than that of a

Figure 2
Missouri Driver's License with First Person Consent: Lower left hand corner.
(Source: St. Louis Post Dispatch Oct. 10, 2014)



live patient. An anonymous survey of 58 OPOs in 2013 revealed that even by the time most states had enacted first-person consent, 20% of procurement organizations were still unwilling to proceed with donation unless they had the consent of the family. Moreover, 35% of OPOs reported that they have yet to proceed with donation in the event that the donor's consent is clear but the family objects. Family objections to first person consent ranged in the survey from 10-25% and only 50% of the OPOs surveyed at that time had written policies to follow in case of a disagreement.[12] However, this survey reflects that 65% of OPOs surveyed would proceed with organ donation even if the family does not agree.

The disagreement between family and first person consent and the legal authority to override the family by the UAGA is not consistent with other end of life care practices provided by the care team to the family at the end of the patient's life. This legislation could be interpreted as being disrespectful to the donor family's ability to make decisions for their loved ones and ignores their needs at the time of their loved ones death. It also could be interpreted as supplanting the role of the caring physician and surgeon in counseling the potential donor family at the time of their loved ones death. It is unclear if the physician and surgeon community is aware of the implications of these "first person" consents, and the impact that the surrounding legislation could potentially have on their relationships with their patients and those families at the end of life of their patient. An open and transparent conversation should be held to educate the physician and surgeon community regarding the process of first person and informed consent for the donation process, and if the DMV is to be used to consent patients, consistent information should be provided by trained individuals to the public such that the consent is one based on information and not based solely on an emotional response to a single question. Donation should be encouraged and is life-saving, but consent of a living patient should be based on a transparent and consistent provision of information by a trained professional no matter where the conversation is carried out.

Organ and tissue donation is a process generated by altruistic desires, and has no potential for financial gain for the donor, or the donor family. These organs and tissues are "gifts."

The Process of Recovery

Once a patient is identified as being at risk for brain death, or the family is discussing the withdrawal of care of a neurologically devastated patient, the OPO is notified, and they determine the donor's medical suitability for donation. No physician or nurse or any other caregiver in the hospital is allowed to make decisions about patient medical suitability for any type of organ, tissue or eye donation per CMS Hospital COP. The physician and surgeon, are the ones to communicate to the family the patient's status of life or death, or the status of predicted poor neurological recovery in the situation for potential donation after cardiac death (DCD).[10] Only an OPO staff member or a trained, designated requester may approach the family of a potential donor for consent for organ, tissue or eye donation when first person consent is not available and when first person consent is available, it is the designated requestor who communicates with the family and takes the required medical and social history of the donor. Professional standards and core competencies have been established for this position by the National Organization for Transplant Professionals (NATCO) which are quite robust and encompass clinical care, crisis intervention, family advocacy and cultural sensitivity regarding views and beliefs of the families of potential donors.[14]

Once consent for donation is confirmed or obtained, the donor is transported, if stable, to the recovery center for Midwest Transplant Services (MTS), in Saint Louis for medical management while organs are being placed and waiting for eventual surgical retrieval. There are only two OPOs in the country that transport brain dead donors for organ retrieval: MTS and Gift of Life in Philadelphia. In

one of the first articles in the literature regarding hospital independent organ recovery in the United States, Jendrisak et. al, in 2005,[15] demonstrated that by moving brain dead donors to a common facility owned and run by MTS, donors had significantly less time in the ICU prior to recovery, minimal operating room delays, reduced organ time in the cold (out of the body), and had potential cost savings when compared to donors managed and recovered at their hospitals of origin. No data was available in this manuscript regarding these practices resulting in improved organ performance in the recipient or improved organ placement; however, moving the donors out of the hospital of origin allows local hospital to use their resources more proficiently.

Currently, both adult and pediatric patients who are brain dead donors in the donor service area served by MTS are transported to their facility with the exception of donors from Cardinal Glennon Medical Center. Currently, DCD donors remain in their hospitals of origin and are recovered there. Once lab values are obtained on the donor, ABO typing, immunological profile, serologies for infectious diseases (such as Epstein Barr virus, cytomegalovirus, Hepatitis C and B, as well as Human Immunodeficiency Virus and other testing-for a more comprehensive review of the requirement for donor screening, refer to the OPTN Policy for Donor Evaluation[16] donor height and weight, these data are entered into a national database to locate potential recipients for those organs that are being recovered. Organs are allocated by strict and consistent allocation policies based on the organ type available. These policies are crafted by the transplant community and regulated by CMS as well as HHS/HRSA via the contract with the United Network of Organ Sharing to ensure equity and fairness to all potential recipients and to assure that the fundamental concept of "organs are allocated to patient's- not centers" upon which the United States allocation system is founded, is followed.

The goals of the allocation policies are to make the best use of every donated organ and give every transplant candidate a fair chance to receive the organ he or she needs. Organ transplantation is unique in the United States due to patients (listed patients, donor family members, and recipients) having a formal role in policy making.[17] Once the organs are allocated, and the recipients identified, those centers' abdominal, thoracic, and cardiac team are scheduled and the recovery occurs in the operating rooms at MTS. For patients who are at the end of their lives, who do not meet criteria for brain death determination, or have no chance for a meaningful recovery and decisions have been made to withdraw life support measures by their family, donation after cardiac death is an option for donation. DCD donors (or now, donation after circulatory determination of death- DCDD) can potentially donate lungs, livers, and kidneys pending their age and underlying medical conditions. Once consent is obtained or acknowledged, these patients are moved to the operating suite area or remain in the ICU, of their hospital of origin, and the ventilator and other life support measures are withdrawn. After the patient's heart stops beating (usually within 30 minutes to an hour for recovery), and the patient is declared dead by a physician or surgeon not associated with the transplant process, the patient is taken to the operating room and organs are rapidly retrieved.

Donation does not adversely affect the timing of the funeral and once donation is completed, the donor is taken to the funeral home. Donation itself does not prevent an open casket funeral and specific surgical preferences by MTS preserve the donor in a manner to facilitate open casket if desired by the family.

The real question of course, is do we as a medical and surgical community understand the process by which consent is obtained in the first person, and do we believe that our patients and their families understand the implications of their decisions on their end of life processes?

Figure 3: MTS Recovery Facility in St. Louis



Perceptions for Conflict of Interest

Organ and tissue donation is a process generated by altruistic desires, and has no potential for financial gain for the donor, or the donor family. These organs and tissues are "gifts." The process of organ donation and transplant often is the epitome of taking a tragic unexpected event (unexpected death of a potential donor) and turning it into something positive- donating organs, saving recipients from death and giving care providers options for their patients who would otherwise die from their disease or the complications from their disease.[18] Professionals involved in all aspects of donation and transplant must maintain the highest level of moral and ethical standards and be "above reproach" to maintain trust with their community; however, as per Naegeli's Law, "making something legal, does not make it moral."[19] Perception is often more important than reality.

As an example of the potential moral quagmire in the business of organ and tissue donation, in 2012, a series of articles in the *St. Louis Post-Dispatch* alleged that there were potential improprieties with the financial status and investment practices of one of the largest suppliers of organs and tissue in the midwest, MTS. The paper reported that there had been intermingling of personal and corporate funds invested into investment opportunities and several real estate developments by the Chief Executive Officer (CEO) of MTS, and several members of the MTS Board of Directors. These investment activities, while these actions were legal, they appeared to violate the concept of "conflict of interest" and the spirit, if not the wording of MTS's own internal conflict of interest policy. The CEO of MTS and several board members invested personal monies in for -profit entities controlled by the for-profit Limited liability corporation (LLC) controlled by MTS.

These practices were questioned in these articles and implications of selling organs and tissue for financial gain, both personal and corporate, were raised.[20, 21] The for-profit companies, controlled by the MTS LLC included several tissue banks: Allosource and ITSO, that processed donor tissue supplied by MTS from both adult and pediatric donors.[20] In response to the concerns raised in the articles, the MTS CEO reported that the OPO "chose to create AlloSource along with two other OPOs to ensure that the region has access to high quality bone and tissue" and that the process of recovery and supplying of tissue to the tissue banks was with family consent and was handled transparently. In addition, the MTS CEO in response to concerns regarding improper use of profits made, stated "excess revenues are used in a number of ways to support the community we serve." [22]

The law is very clear regarding the sale of "body parts" in the United States, however, tissue banks can charge what is considered a reasonable fee for tissue processing. The tissue industry nationwide represents a 1 billion dollar industry and there are several examples in the United States of questionable practices and accusations of profiteering from the altruistic gift.[23] In addition, to the reported relationships with the tissue banks, the Post-Dispatch also reported several real estate developments that were linked to MTS and a private development firm in the St. Louis area. In the articles, it was reported that the real estate developments in St. Louis included not only the state of the art organ recovery center (See Figure 3) but several other real estate developments including the Highlands development in Saint Louis. Monies invested in these real estate ventures were from both individuals who

were affiliated with and those not with MTS, as well as MTS itself[20,21] MTS has denied any conflict of interest, however, there has been some financial divestiture by the CEO and some board members in several of these companies since the articles were published in 2012. In addition to the investments in real estate and tissue banking, MTS also owns a series of DMV offices.[24] In responding to concerns about conflicts of interest, the CEO responded that his organization had never considered that what the organization was doing was wrong or conflicted; they were trying to save lives.[23] The actions of MTS were not illegal; however the community comments on line in response to the articles appeared to question the alleged potential conflicts of interest the practices represented.[20,21]

Conclusion

Organ and tissue donation clearly saves and improves the lives of those patients who require transplant and tissue. It is clear that there continues to be a growing gap between patients listed for organs, and organs available. It is also clear that the majority of people in the United States favor organ donation and the legislative process has tried to respond to those views; however, recent changes to the UAGA could be interpreted as "over reaching" and promoting organ donation at the expense of family's decision making at the end of their loved ones lives. The real question of course, is do we as a medical and surgical community understand the process by which consent is obtained in the first person, and do we believe that our patients and their families understand the implications of their decisions on their end of life processes?

An open and transparent conversation should be held to educate the physician and surgeon community regarding the process of informed consent for the donation process, and if the DMV is to be used to consent patients, consistent information should be provided by trained individuals to the public such that the consent is one based on information and not based solely on an emotional response to a single question. The consent process and the qualifications of the requestor should be just as robust with the live patient as it is with their family, when they are dead. Donation should be encouraged and is life-saving, but consent of a living patient should be based on a transparent and consistent provision of information no matter where the conversation is carried out.

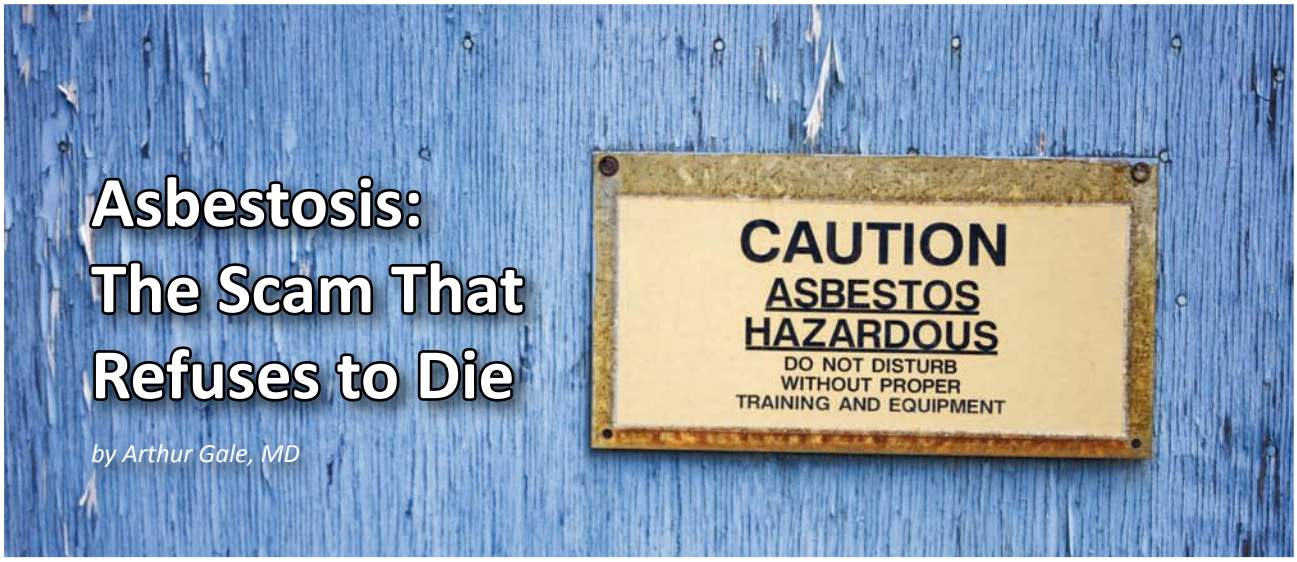
Finally, we as a medical and surgical community should expect that all professionals involved in all aspects of donation and transplant maintain the highest level of moral and ethical standards and be "above reproach."

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Asbestosis: The Scam That Refuses to Die

by Arthur Gale, MD

Litigation has now changed from the traditional model of an injured person seeking a lawyer to an entrepreneurial model where lawyers recruit clients without a known disease.



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Recently, a patient came to my office and asked me what I knew about asbestosis. His union had asked him to be tested for asbestosis. He had no symptoms of any illness. I told him that in my opinion the overwhelming majority of cases diagnosed with asbestosis were fraudulent. I told him further that I had written articles about asbestosis fraud and gave him a copy of my book which contained these articles. He seemed to be receptive to my comments. Nevertheless he decided to get tested for asbestosis.

A couple of months later he came to my office and showed me the report of his chest x-ray contained in a letter from a local physician to an out of town attorney. The x-ray was read as showing bilateral pulmonary interstitial fibrosis. The letter also stated that given the patient's occupational history the patient "has asbestosis." The reader of the x ray was not a radiologist.

Five months later I ordered a chest x-ray on the patient as part of a workup for an unrelated medical problem. An excellent board certified radiologist interpreted the new chest x-ray as negative. I showed the report to the patient and reassured him that he did not have asbestosis. I also told him the new chest x-ray confirmed my suspicion that his previous chest x-ray report was likely part of a scam by mass tort lawyers to extort money from asbestosis trust funds.

The definitive article exposing fraud in the diagnosis of asbestosis was by Gitlin et al. of Johns Hopkins School of Medicine. In this study published in 2004 films read by plaintiffs' radiologists were compared to the readings of the same films by independent radiologists. The plaintiffs' radiologists read 95.9% of the films positive for abnormalities that were compensable for pulmonary asbestosis. The independent radiologists who were unaware of the readings by the plaintiffs' radiologists read the same set of films as positive in only 4.5% of cases.[1]

A couple of examples of massive fraud perpetrated by doctors reading films for asbestosis attorneys highlight how expert witnesses can abuse the legal process and undermine the search for truth and justice. One doctor, Ray Harron, personally diagnosed 51,048 asbestos claims. He diagnosed a record number of 515 people in one day, which amounts to one diagnosis per minute. Another doctor, Ray Segarra, a pulmonologist diagnosed 29,000 claims of asbestosis. He estimates that he has made about $10 million doing this work. When questioned on National

Public Radio about his readings of chest x-rays, Segarra replied, "I'm certainly not a schemer at all…but am I an opportunistic? I suppose I am. But everybody is."[2]

Litigation has now changed from the traditional model of an injured person seeking a lawyer to an entrepreneurial model where lawyers recruit clients without known disease. Of the 850,000 asbestos claimants who brought suit against 8,400 different defendants it is estimated that about 600,000 were recruited by mass screenings.[3]

Even though the asbestosis and silicosis scams have been widely publicized plaintiff lawyers are not deterred. They continue to heavily advertise on television and in other media. Now they are enlisting unions in order to gain more plaintiffs. They continue to use "hired gun" expert witnesses instead of reputable independent physicians. Both sides know these cases are almost always non-meritorious like my patient's. Both sides also know that most cases settle because it usually costs more to defend these suits than to settle. The lawyers and doctors who engage in asbestosis fraud obviously have no shame.

Because of one courageous judge, Janis Jack, a former nurse who exposed massive and brazen fraud in silicosis and asbestosis litigation, some insurers and manufacturers are finally fighting back. A major mass tort asbestosis plaintiff law firm is run by Peter Angelos, owner of the Baltimore Orioles major league baseball team. Recent revelations show that 70% of the 13,000 plaintiffs he represented in mass filings had been diagnosed with asbestosis by just five doctors. One doctor diagnosed 50% of the cases. He also happened to work as a team doctor for the Baltimore Orioles. His partner also diagnosed many of the plaintiffs. More than 1,500 of the claimants were duplicates.[4] The average payout to "patients" in a mass tort filing is between three and five thousand dollars. The law firm's take is about forty percent of the award and the payouts can be in the tens of millions of dollars.

A few years ago I told a prominent medical malpractice defense attorney that mainly because of false expert witness testimony our legal system was corrupt. He flew into a rage. He said that he would not defend a doctor in a malpractice suit who held such views. He implied that our legal system was fair and just and was the best method ever invented to determine the truth. The few examples cited above are just the tip of the iceberg and illustrate how wrong he is.

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An Asbestos Silver Lining

Could Sheldon Silver's arrest help clean up the New York tort racket?

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The corruption charges against former New York Assembly Speaker Sheldon Silver have exposed the rotten links between politicians and trial lawyers, and that attention is bearing fruit. Witness the clarifying drama in New York's asbestos court. Manhattan Administrative Justice Peter Moulton recently held an unprecedented "town hall meeting" to hear complaints from dozens of defense attorneys who say New York's asbestos docket has been rigged to favor one tort firm: Weitz & Luxenberg, the same powerhouse asbestos firm that benefited from an association with Mr. Silver.

According to the federal complaint, Mr. Silver is alleged to have directed state funds to the practice of a New York asbestos doctor, who gave Mr. Silver the names of mesothelioma patients to serve as plaintiffs. Mr. Silver passed these names to Weitz & Luxenberg, receiving $3.2 million for his referrals. Weitz & Luxenberg wasn't charged and denies wrongdoing, yet the case has cast a spotlight on the extraordinary relationship between the firm and the court that deals with asbestos cases—the New York Consolidated Asbestos Litigation docket. Until recently, the chief judge of NYCAL was Sherry Klein Heitler, who rose through the judicial ranks during Mr. Silver's political tenure.

When Justice Heitler retired last month, more than half of the cases in the asbestos docket were Weitz & Luxenberg's. In four years the firm won $273.5 million of the $313.5 million (87% of the total) awarded in 15 mesothelioma verdicts—$190 million in 2014.

Justice Heitler also made a highly controversial ruling last year—at the request of the favored firm—to reverse a 20-year policy against allowing punitive damages in asbestos cases. The judge reached the mandatory retirement age of 70 last year but was kept on into 2015. Not long after the Silver scandal broke, the court announced she was finally stepping down as head of NYCAL. The mess thus lands with her successor, Justice Moulton, who has a reputation as a straight-shooter. Some 45 firms representing 200 asbestos defendants have filed a motion to halt all asbestos proceedings for 60 days, in order to investigate and repair the rigged NYCAL system.

The defense lawyers pointed out in a separate letter to Justice Moulton how at odds NYCAL is with reforms in other prominent asbestos dockets. NYCAL allows firms like Weitz & Luxenberg to consolidate cases, putting enormous pressure on defendants to settle, or risk huge judgments. Justice Heitler's punitive damage order has heightened that pressure on defendants to roll over or face what the letter calls "astronomical verdicts."

With any luck Justice Moulton will grant the stay and use this moment as an opportunity to adopt reforms that begin to clean up NYCAL's asbestos racket. Some 300 corporate asbestos defendants are mired in New York litigation. Reform would address the source of Mr. Silver's alleged corruption—the asbestos tort racket. **MM**

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Paternity Law: Sperm Donors, Surrogate Mothers and Child Custody

by Lisa Luetkemeyer, JD & Kimela West, JD

While most states leave it to the courts to rule on the enforceability of surrogacy contracts, courts may be ill-equipped to appropriately set policy on such a complicated issue.



Lisa Luetkemeyer (left) is an Associate and member of the Healthcare, Life Sciences & Pharmaceuticals industry team at Husch Blackwell LLP in St. Louis. Kimela West (right) was an Associate and member of the Healthcare, Life Sciences & Pharmaceuticals industry team at Husch Blackwell LLP and is now in-house counsel for Mercy Health Systems in St. Louis. The Firm acts as outside general counsel to the Missouri State Medical Association. The information contained in this article should not be construed as legal advice or legal opinion on any specific facts or circumstances. The contents are intended for general informational purposes only, and readers are encouraged to consult their own attorney regarding specific legal questions.
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Introduction

The use of third-party reproduction has been practiced for over a century.[1] With the advancement of assisted reproductive technologies in recent years, the market for assisted reproduction has increased with many individuals and couples turning to third party donors to receive gametes.[2] Depending on the process used to procure the donated gamete, the recipient may or may not know the identity of the donor.[3] To receive donor gametes, recipients have the option of using agencies or clinics, close friends or relatives, or even complete strangers located through advertisements in publications or online.[4] While minimally regulated, obtaining donor gametes through traditional clinics and sperm banks requires some protocol; in contrast, "buying sperm over the internet . . . is not much different than buying shoes."[5]

Artificial Insemination

One of the first documented cases of donor insemination occurred in 1884 when a married couple struggling with male infertility consulted Dr. William Pancoast, a physician and medical school professor.[6] Without obtaining the couple's consent or informing them of what he was going to do, Dr. Pancoast anesthetized the wife and inseminated her with the sperm of the "best looking member of the [medical school] class."[7] The procedure resulted in a successful pregnancy and subsequent birth.[8] Although the husband was eventually informed of the procedure, the wife was never told that her husband was not the biological father of the child.[9]

Although artificial insemination in humans was possible in the late nineteenth and early twentieth centuries, it was not socially acceptable and women undergoing the procedure were often considered to have committed adultery and their children were perceived as illegitimate.[10] In the 1960s, states such as Georgia and California began to recognize donor-conceived children as legitimate, and in 1973 the Uniform Parentage Act (UPA), a model statute that may be adopted on a state-by-state basis, recognized the paternity of husbands who consented to their wives' artificial insemination.[11] As first promulgated in 1973, the UPA addressed artificial insemination only in the context of married couples.[12] The husband rather than the sperm donor was legally recognized as the natural father of a child conceived through artificial insemination so long as three conditions were met: the artificial insemination was conducted under a physician's supervision; the husband gave his written consent; and the physician filed the consent with the state health department.[13] By 1998, thirty states had adopted the UPA or a similar statute, with fifteen states eliminating the requirement that the procedure be supervised by a licensed physician.[14]

While the UPA did address certain situations involving donor-conceived children, it did not address the rights of divorced fathers, the standing of non-marital fathers to sue for parental rights, the parental status of sperm donors when the recipient was unmarried or was not inseminated under the supervision of a licensed physician, or parentage issues surrounding surrogacy and gestational agreements.[15] Ultimately, the UPA applied only to children conceived through artificial insemination performed by a licensed physician on a married woman.[16]

In 2000, the UPA was revised to remove the physician supervision requirement and include procedures conducted on non-married women to "provide certainty of nonparentage for prospective donors."[17] It clarified that donors could not sue to establish parental rights or be sued and required to support the resulting child. The revised UPA essentially eliminates donors from the "parental equation" and states that sperm donors are not legal parents if conception occurs through artificial insemination and the donor does not intend to become a parent.[18] However, the revised UPA still allows a donor to contest paternity if he can prove that he lived with the child within the first two years of the child's life and considered the child to be his offspring.[19] However, few states have adopted the revised UPA to date. While most states do have laws that remove paternal rights from anonymous sperm donors and give them to the intended parents, those statutes generally do not apply if the woman is not married or a physician is not involved in the process.

Many courts are reluctant to deny parental rights to known sperm donors if they request them.[20] In *Jhordan C. v. Mary K.*, the court awarded paternity rights to a man who donated his semen to inseminate an acquaintance.[21] The woman performed the insemination herself at her home and not under the direction or supervision of a licensed physician.[22] After the child was born, the donor demanded monthly visits with the child and the mother reluctantly agreed. The donor later filed an action to establish paternity and visitation rights. The court ruled in the donor's favor, determining that the donor's parental rights were not extinguished under the applicable state statute because a physician was not involved and because the donor's regular visits with the child established that the donor and woman acted as if the donor had some familial status with respect to the child.[23] The parties in the Jhordan C. and Mary K. case did not reduce their arrangement to a writing. Therefore, the court looked to the parties' actions to construe the intent of the arrangement.

Even in instances where the parties agree on parentage ahead of time, contracts that explicitly preclude rights for known sperm donors are not necessarily enforceable.[24] In *Kansas v. W.M.*, a same-sex couple solicited a sperm donor through Craigslist.[25] The parties signed an agreement whereby the donor relinquished his paternal rights to the child. The couple performed the insemination in their home resulting in pregnancy. Prior to the birth of the child, the couple separated and the birth mother applied for benefits with the Kansas Department of Children and Families ("DCF"). After the birth of the child, DCF filed a petition to declare the sperm donor as the natural father of the child and sought an order for child support and a judgment for payment of medical expenses to DCF for past benefits. Under the Kansas Parentage Act, much like the original UPA, a sperm donor is not deemed the natural father of a resulting child only if the semen is provided to a licensed physician for artificial insemination and the woman is married.[26] Here, the court determined that despite the written agreement to the contrary, the donor was the natural father because the insemination was not conducted through a physician and the woman involved was not married. Therefore, the donor was liable to DCF for child support and past benefits.

Like Kansas, Missouri only exempts paternal rights for a sperm donor if he donates to a married woman and the insemination is conducted under the supervision of a licensed physician.[27] Because there are no decisions on point, it is unclear how Missouri courts would interpret the statute with respect to child support or paternal rights. In contrast, Illinois law provides that a sperm donor is not the natural father so long as the sperm is provided to a licensed physician for artificial insemination to a woman other than the donor's wife.[28] The woman undergoing artificial insemination does not have to be married. The Illinois Court of Appeals has interpreted the statute such that an anonymous sperm donor responsible for artificial insemination of a child is not entitled to be treated as the child's natural father and therefore has no paternal rights.[29]

In sum, the laws governing paternity of sperm donors vary widely across the country and in many states are untested by the judicial system. Because many of the applicable state statutes predate the recent rapid advancement in assistive reproductive technologies, current laws and the courts' interpretations of those laws may not accurately reflect the intent of the parties involved. Therefore, parties considering donating sperm or using donor sperm for artificial insemination are cautioned to carefully consider the legal implications and consult an attorney who is familiar with parentage laws to ensure that the appropriate parties are deemed the legal parents of the child.

Surrogacy

Since it began over a decade ago, surrogacy has become a viable alternative means of reproduction and is utilized by an increasing number of infertile and same sex couples. With increased use, surrogacy arrangements are also becoming more socially acceptable. But many controversial issues surround surrogate motherhood. The surrogate mother's desire to keep the child is only one of the many ethical and social issues involved in surrogacy arrangements. Other issues include: moral beliefs regarding the right to have one woman bear a child for another, the enforceability of a surrogacy contract, proper payments to the surrogate mother, and how to decide custody of the child if a dispute arises.[30] The law of surrogate motherhood in the United States is in a state of flux and confusion. States have widely differing laws, some enforcing surrogacy contracts, some banning them entirely, and some allowing them under certain circumstances. Many states have no laws regarding surrogacy contracts at all. As a result, courts are often left to decide parenthood disputes arising from these contracts, and employ a range of legal theories by which to do so: intent, contract, genetics, gestation and rarely, best interests of the child.[31]

History of Surrogacy Law in the United States

There are two types of surrogacy: traditional surrogacy and gestational surrogacy. A traditional surrogacy arrangement occurs when a couple contracts with a surrogate mother to have the intentional father's sperm artificially inseminated into the surrogate. In traditional surrogacy, it is clear that the surrogate is the biological mother of the child and so she does have parental rights to the child.[32] Such reasoning led to decisions such as the Baby M. case, discussed below. The second type of surrogacy, called gestational surrogacy, can take place several ways. The intentional mother can use her own egg and the intentional father will use his own sperm, and the embryo, which is fertilized outside of the womb, will then be transplanted into the uterus of the surrogate mother.[33] In this case, the surrogate is not genetically related to the child.[34] Other options include using the intentional father's sperm and the egg of an anonymous donor or using both sperm and egg donors to create the embryo that will be implanted in the surrogate. This variant on surrogacy eliminated the birth mother/genetic mother equation, and led to litigation disputing the child's parentage.[35]

The United States, unlike many countries, has no national policies governing assisted reproductive technology, including surrogacy. State laws vary widely from one state to the next. Several states expressly prohibit it, declaring all such agreements void and unenforceable as a matter of public policy. A few even make it a crime to pay for surrogacy. Other states allow it but restrict its use to married couples or to cases in which at least one of the intended parents has a genetic link to the child. And a handful of states have been very open to the use of reproductive technology and have allowed it to flourish.[36]

But a majority of states, including Missouri[37], have no laws directly addressing the enforceability or legality of surrogacy, leaving many such arrangements in legal limbo and raising a number of social, legal and ethical issues involving parenthood, the best interests of children, and the rights of same-sex couples and other nontraditional families for the courts to resolve.

The Baby M. case first brought widespread attention to the procedure and the possible legal complications that surrogacy can entail.[38] The case arose from a contract entered into in February 1985 by William Stern and Mary Beth and Richard Whitehead, which recited that Whitehead, in return for a $10,000 fee, agreed to be inseminated with William's sperm, become pregnant, bring the child to term, bear it, and then relinquish parental rights and deliver the child to the Sterns, whereupon Elizabeth Stern, William's wife would formally adopt it. The contract also recited that the Sterns would pay a $7,500 fee to the Infertility Clinic of New York, which had arranged for the surrogacy. Both Sterns very much wanted children, however: at first they considered adoption, but became discouraged at the delays involved, and the possible difficulties they might encounter due to the difference in their ages and religious backgrounds. Because of these concerns, they responded to an ad for the Infertility Clinic of New York, an ad to which Whitehead also responded.[39]

The insemination was successful. Whitehead became pregnant and gave birth to a baby girl on March 27, 1986. On March 30, she turned the baby over to the Sterns at their home. Whitehead began to have second thoughts, however: she appeared at the Stern's home the next evening severely distraught, begging to take the child for one week after which she promised to surrender her. The Sterns, concerned that Whitehead might commit suicide and taking her at her word, allowed her to take the child. The Sterns brought a complaint seeking that the surrogacy contract be enforced, i.e., that the child be permanently placed with them, that Whitehead relinquish her parental rights, and that Mrs. Stern be allowed to adopt the child. The trial court found the surrogacy contract to be valid, and ordered compliance. A large part of the basis for the trial court's decision was based on the view that custody with the Sterns was in the child's best interests. Whitehead appealed. The New Jersey Supreme Court declared surrogacy contracts void against state public policy but then determined that the best interests of the child born to the surrogate mother required that custody of that child be awarded to the biological father and his wife.

Various State Laws Resolving Parenthood Disputes Arising from Surrogacy Contracts

In the almost thirty years since the Baby M case, there has been little resolution of the controversy surrounding surrogacy and similarly little resolution of the legal status of such arrangements. Most states have unclear laws governing surrogacy agreements. Nevertheless, they can roughly be grouped into six categories, reflecting the degree of restriction they impose on surrogacy agreements.[40] Ranging most favorable to most restrictive, there are states that: (1) hold surrogacy agreements valid and enforceable, (2) have unclear statutes but favorable case law, (3) explicitly allow surrogacy agreements but regulate the market, (4) have unclear statutes and no case law, (5) hold surrogacy agreements void and unenforceable, and (6) prohibit and/or penalize individuals entering such agreements, sometimes under threat of heavy fines and jail time.[41] Most states fall in the middle, and most do not have statutes that address the validity or legality of surrogacy contracts.

Some states prohibit surrogacy contracts, whether compensated or not, and impose both civil and criminal penalties on anyone taking part in such contract. For example, Arizona's statute states that a surrogate is "the legal mother of a child born as the result of a surrogate parentage contract and is entitled to custody of that child."[42] Despite the fact that the Arizona Appellate Court ruled this statute unconstitutional because it denied the genetic mother equal protection, it has not been repealed. Other states ban enforcement of surrogacy contracts, thereby presumably also making the surrogate the legal mother of the child.[43] Many states, like Missouri, have simply failed to pass laws addressing the issue.

Despite the explosion of the surrogacy market, very few states have changed their laws in recent years. One exception is Ohio, where the State Supreme Court held in 2007 that a gestational surrogacy agreement prohibiting surrogates from asserting parental rights did not violate public policy.[44] The varying state of the law comes down to two questions: (1) will the surrogacy contract be enforced and will the surrogate be forced to comply with the requirement that she relinquish parental rights and (2) may the surrogate receive compensation other than coverage for the expenses associated with gestation.

Given the growing prevalence of surrogacy as a serious option for infertile couples and same sex couples, the lack of political action is alarming. While most states leave it to the courts to rule on the enforceability of surrogacy contracts, courts may be ill-equipped to appropriately set policy on such a complicated issue.

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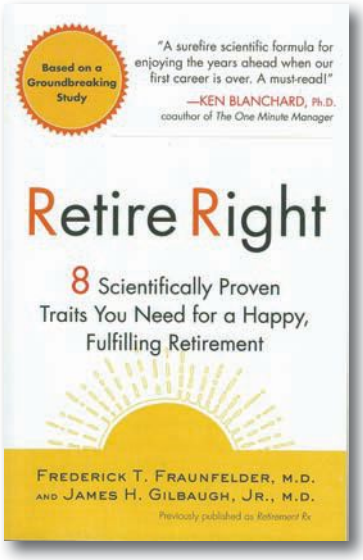
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The Retirement Doc's Quiz

by Frederick T. Fraunfelder, MD & James H. Gilbaugh Jr., MD

Give us ten minutes of your time and we'll give you information that will serve you well for the rest of your life.

Step one: Take the quiz on the following pages. The few minutes needed to complete it is your first step toward guaranteeing yourself a highly successful retirement. The quiz we offer you here is a streamlined adaptation of our original extensive Retirement Docs' Quiz/Survey. It provided the backbone for our research and findings in our book Retire Right.

Your personal quiz results are based on four phases of retirement. The four require a different combination of skills and strengths, often varying with a passage of time. Within the phases there are eight specific traits that weave throughout them. Success or lack of it in each trait accurately predicts how well you can expect to do, or are doing in your own retirement. Your results, when compared to those of others, act as a barometer.

Each of the eight traits must be mastered before a successful retirement is guaranteed. Your quiz results will identify when you're spot-on or when a tune-up in one or more of the eight is needed.





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The grading system results are statistically significant with an alpha coefficient (reliability) of 0.75, highly predictive and acceptable for publication in peer-reviewed scientific journals.

Circle the number that relates to your response in each of the following questions. Enter that number in the "My Score" box in the column on the far right. After you've completed the quiz, total your score at the bottom.

Your Score and What It Means

If you scored between 185 and 220:

Congratulations. You're right there with the top 20 percent of our Retirement Docs' Survey respondents, our Highly Successful Retirees.

If you scored between 150 and 184:

Your score is in the top 40 percent, indicating that you're well on your way to a highly successful retirement but need some fine tuning in one or more of the specific eight traits.

If you scored between 120 and 149:

Your score is in the middle of the pack, the average. Your future may be promising but currently it's far from highly successful. Focus on your low scoring specific quiz questions that need to be improved. Make a list of them and make a conscious effort to improve them on a daily basis.

If you scored between 85 and 119:

Well, the bad news is that you've got lots of work to do. But the good news is that it is work you'll enjoy because it's all about you and your retirement success. Your score is in the lower 40 percent so it's best to recognize and concentrate on the areas that indicate a need for additional attention.

If your score is 84 or lower:

Okay, it's definitely time to dig in. You're score falls in the lowest 20 percent of the Retirement Docs' Survey respondents. But never fear, there is hope. You've taken the time to read this article and take the quiz. Review and recognize your areas needing attention. It's never too late to start on your own road to success. Each one of us has the chance to enjoy and benefit from retirement.

Following the quiz is a description of the four phases of retirement and the eight traits that weave throughout them, it's your guarantee to a highly successful retirement.

Retire Right Quiz

Rate yourself on the following	Poor	Fair	Good	Very Good	Excellent	My Score
1. I adapt or am flexible when events or circumstances change	0	2.5	5	7.5	10	
2. I am satisfied with the social support from my family	0	2.5	5	7.5	10	
3. I am satisfied with the financial planning for my retirement	0	2.5	5	7.5	10	
4. I am satisfied with the planning for the non-financial aspects of my retirement	0	2.5	5	7.5	10	
5. I will be able to maintain my standard of living after my retirement	0	2.5	5	7.5	10	
6. I have a positive mental outlook	0	2.5	5	7.5	10	
7. I make an effort to control my weight	0	2.5	5	7.5	10	
8. I have regular medical checkups	0	2.5	5	7.5	10	
9. I am satisfied with my general health	0	2.5	5	7.5	10	
10. Religious beliefs or spirituality influences my life	0	2.5	5	7.5	10	
11. I have enough intellectual stimulation	0	2.5	5	7.5	10	
12. I have enough social activities	0	2.5	5	7.5	10	
13. I am satisfied with my sexual desire based on my age	0	2.5	5	7.5	10	
14. I get regular exercise or physical activity	0	2.5	5	7.5	10	
15. I have a passion for multiple projects	0	2.5	5	7.5	10	
16. I am involved in activities that make society better	0	2.5	5	7.5	10	
17. I am satisfied with the variety in my leisure activities	0	2.5	5	7.5	10	
18. I am happy with my life	0	2.5	5	7.5	10	
19. I see myself as lucky	0	2.5	5	7.5	10	
20. Education level	Less than high school 0	High school 2.5	Some college 5	College degree 7.5	Post grad work or degree 10	
21. I smoke	> 1 pack 0	> 1/2 pack 2.5	< 1/2 pack 5	Quit 7.5	Never 10	
22. Alcohol consumption 1 Drink = 12oz beer, 5 oz wine, or 1.5 oz liquor	> 21 drinks per week 0	14-21 drinks per week 2.5	< 14 drinks per week 5	< 7 drinks per week 7.5	None or occasionally 10	

Total Your Score _____

There are four distinct phases of retirement and eight traits that weave their way throughout them. Achieving success in each trait is a must for a guaranteed four phase "Bullet Proof" retirement.

Retire Right survey data found that retirement is divided into four distinct phases.

Phase One: Planning for Retirement

You are fully employed but preparing and planning for life beyond your income-earning years. Ideally, fiscal planning should start in your 30s and at the latest in your early 40s. By the time you reach your mid-to-late-fifties, you should be financially fairly well prepared for your future.

This is also the time to get serious about your vision for the non-fiscal side of retirement. Ideally allow yourself at least five to ten years before your semi-or full retirement to start laying the groundwork for the non-fiscal side of retirement.

Phase Two: Shifting into Semi-Retirement

Semi-retirement basically means working part time in some capacity and being paid for it. Statistically, we found that our respondents with high incomes and/or high levels of education spent more time in this phase than in phases three and four, probably because they derived satisfaction or identity from their work.

Doing some type of work (including volunteering which can be almost as important as being paid), during phase two is good for your emotional, financial, and physical health. The social science literature finds that seniors who don't do any work later in life die sooner than their peers who do. Most physicians should spend as much time in phase two as they can.

It is possible to stay in phase two for a very long time. Perhaps for so long that you may spend only a few years, months, or even days in phases three and four.

The secrets to staying in phase two for a long time are the basics. First, maintain your health so you can work. Number two, stay focused on work or volunteering that you enjoy and can feel passionate about. Three, rid yourself of drudgery or tasks that bore you.

Our phase-two survey respondents were an average age of 67.

Phase Three: Full Retirement

No more practice of medicine! For many physicians, both men and women, this is often much more difficult than it seemed it would be. When you have dedicated your life to the practice of medicine and it stops, it can bring with it a loss of identity, respect, and prestige – in other words, it can be stressful and depressing.

Physicians who have cultivated leisure activities over the years and were practicing medicine have a definite advantage. Developing and planning for activities outside of a medical practice before it ends can be critical.

Our phase three survey respondents were an average age of 72.

Phase Four: Restricted Full Retirement

You may experience many more limitations due to health, age, and finances when you hit this fourth phase. Without a doubt, the most difficult period of retirement is in this phase. Adversity may come at you in waves, often with little or no time to recover between assaults.

Survey results found that women weather this period better than men. In fact, 4% of our female respondents felt that this phase was their happiest and most successful. Maybe the cessation of caregiving responsibilities by the spouse may be a factor.

Our phase four survey respondents were an average age of 78.

Both male and female physicians move in and out of Phases One, Two, and Three as long as they are healthy, taking part time jobs using their medical background, new business ventures or even just "busy" work. Remember, volunteering counts as work.

Highly Successful Retirees Possess the Same Eight Traits

Along with the four phases that emerged from our study there were eight traits that the top 20% - our most highly successful, i.e. well-adjusted, and contented - retirees shared. Fully possessing these eight traits guarantee you a highly successful retirement.

1. Sowing Seeds - The Planner's Advantage

Of the eight traits, planning was statistically the most significant. Retirees who had a game plan for both the fiscal and the often neglected non-fiscal aspects in of retirement in phases two, three, and four were the most satisfied with their lives. Wealth per se was not as important as not having to decrease their standard of living in retirement.

2. Accentuate the Positive-It's All About Attitude

Your perception of your own health, financial well-being, age, and achievements matters more to your retirement success than your actual age, health, income, or

Happy families are all alike.
But each unhappy family is unhappy in its own way. - Leo Tolstoy

Likewise, highly successful retirees are all alike.
But each unhappy retiree is unsuccessful in his or her own way. - Retirement Docs

position in life. Social scientists and psychologists (Martin Seligman at the University of Pennsylvania being one of the most prominent) say that while people are genetically wired to be either cheerful or grouchy, all of us can learn to be more optimistic by examining how we think about situations and consciously changing negative thoughts into positive ones.

3. Go with the Flow-Accept Change

As we age, physical and metal challenges increase. For many of us, fear plays a huge role in adjusting to a new life without the titles, labels, or acknowledgments that life before retirement provided. Each advancing phase brings with it new trials and traumas. People with the ability to accept change in their first careers will almost always carry the same ability right into their second careers. Those who successfully overcome major upheavals before retirement usually have the confidence to tackle new challenges. In all four phases, the ability to adapt and to accept change is crucial to your success.

4. A Little Help from Your Friends and Family

Develop a wide and varied support group. Surround yourself with people your age as well as those who are older and younger. Your intimate support group should include your spouse, life partner, or best friend; your children; grandchildren; and other extended family members. In this day and age, with the definition of "family" ever broadening, it can also include a larger community made up of close friends, religious and social organizations, special interest groups, and pets. Ongoing involvement with your support-group family is one of those eight traits you must master throughout your four phases to guarantee a highly successful retirement.

5. Kick Back-Enjoy Your Leisure Time

Though the kinds of interests you pursue will often vary in each retirement phase it's important to choose and develop a wide variety of both mentally and physically challenging activities in three specific categories: those you commonly do with one other person, those you do in a group, and those you do by yourself. These are not necessarily things that you are passionate about, but they should be enjoyable activities that free your mind and relax you. That is the essence of leisure.

6. Here's to Your Health

72% of the people we surveyed considered heredity the prime factor for long-lasting health and a long life. Not true. After age sixty it's not your genetics but your lifestyle that is the main ingredient for longevity. Most serious hereditary diseases expose themselves before age sixty; after sixty, it's not so much the hand you've been dealt as how you play it.

7. Passion and a Purpose

In retirement, your identity no longer comes from a job title but from an overall view of yourself. The earlier you figure out what gives you a sense of fulfillment, the more successful you'll make your retirement. Engaging in an activity that makes time fly, or an activity so intriguing or meaningful that you get lost in it, is a passion to hang on to.

8. Let the Spirit Move You

In retirement, having a belief in something "bigger" than we are can offer a major assist when we're faced with trauma. This is especially important in phases three and four, when setbacks occur more frequently.
We defined spirituality as anything outside of yourself which gives you comfort and solace. Religion is the old standard; others find this in family, arts, nature, science, pets, etc.

There's a caveat to these eight traits: We found that every survey respondent who was missing even one was unable to meet the highly successful criteria. The same survey information also pinpointed that failure in, or omission of, any of the eight traits often caused failure within one or more of the four phases. That tells us that you can have all eight traits working for you in one phase, but if you fail at any one of them in another phase, you're not where you should be, and the warranty on our guarantee will run out.

We are hitting the highlights of Retire Right. Our data is from our book *Retire Right,* Avery Publishing, available at Amazon.com. The book outlines how and where to get help to achieve each of the eight traits. **MM**

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Keeping it Clean

Treating the Elite Athlete: Anti-Doping Information for the Health Professional, (March/April 2015) by Shikha Tandon, Larry Bowers, PhD, and Matthew Fedoruk, PhD, from the United States Anti-Doping Agency (USADA) covers an important topic in sports medicine. As stated in the article, clean, safe competition in all levels of sports is vital not only for the athlete's success, but to sports overall. The Goldman Dilemma is a well-documented survey of Olympic athletes that shows that 50% would take a supplement knowing it would lead to death within five years as long they were guaranteed a gold medal. This thought process in athletes' leads to the daily battle to keep sports clean.

For the health care provider, understanding the Therapeutic Use Exemption (TUE) process is vital in helping your patients maintain their eligibility while treating them appropriately. As a team physician in major league baseball and my experience as a head team physician at a NCAA Division 1 institution, the correct paperwork from an athlete's primary care provider smooths this process. Reviewing the USADA and other agencies rules and prohibited drug lists are important. Athletes are ultimately responsible for what goes into their bodies, but many need professional help with these decisions. Another good source is www.nsfsport.com, which certifies supplements and sports nutrition products.

Overall, this review article was vital for any provider with athletes in their practice.

Brian L. Mahaffey, MD, MSPH, FAAFP
MSMA member since 1999
Director, Mercy Sports Medicine
Team Physician, St. Louis Cardinals
Editorial Board, Missouri Medicine

Near Death Experience Life-Changing

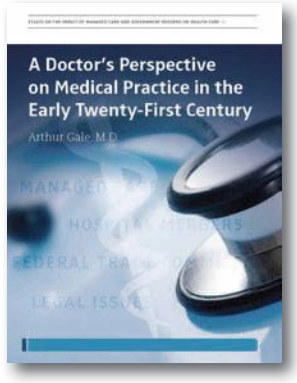
I have found each of the *Missouri Medicine's* Near-Death Experience (NDE) articles to be well done and of great interest. I think you have done a terrific job, and I appreciate that you took the time to create this sort of series. I presume it has provoked thought and discussion among many physicians who might not otherwise consider this topic. I also expect it will be life-changing for some of your readers. I am chagrined that I did not contribute to the series, but please accept that it is only a reflection of my not having the time to write an article of the quality that your series deserved.

Again, congratulations on a wonderful and meaningful series.

Mary C. Neal, MD
Spinal Surgeon, Jackson, WY
Author: To Heaven and Back: A Doctor's Extraordinary Account of Her Death, Heaven, Angels, and Life Again

New Book Compiles Writings by Arthur Gale, MD

Arthur H. Gale, MD, has published his third book, "A Doctor's Perspective on Medical Practice in the Early Twenty-First Century." The book contains 21 essays published *in St. Louis Metropolitan Medicine* and *Missouri Medicine* over the past five years.



Dr. Gale said, "The new book shows that contrary to the predictions of the experts, managed care has been a failure. Independent objective studies have shown virtually every health system reform introduced by managed care has failed to reduce costs or improve quality. In most cases, the reforms have actually increased costs. These managed care reforms are also responsible for much of the frustration and anxiety that is so prevalent today among practicing physicians and many patients as well. As in my previous, two books the new book also contains a section on legal and ethical issues."

Topics of essays in the book include hospital mergers, pay for performance, Medicare Advantage, hospital-owned medical practices, medicine's moral compass, and more.

Copies of "A Doctor's Perspective" may be purchased for $10 each, donated to the Missouri Physicians Health Program. Dr. Gale has underwritten all production costs, so the total purchase amount represents a donation to MPHP. To order a book, send a check payable to MPHP to the St. Louis Metropolitan Medical Society, 680 Craig Rd., Suite 308, St. Louis, MO 63141. The book also will soon be available at amazon.com. For more information on the book, visit www.arthurgalemd.com.

Dr. Gale has practiced internal medicine for 50 years in the St. Louis area. For more than 20 years, he has been writing on the topic of managed care and government reforms. His previous writings have been compiled in "The Hijacking of American Medicine by Managed Care" (2004) and "The Hijacking of American Medicine by the Federal Trade Commission" (2009).

-Jim Braibish/St. Louis Metropolitan Medicine Managing Editor



Missouri Medicine announces a new member of our Editorial Board. Board members are selected on the basis of exceptional professional accomplishment and expertise in their specialty.

Katherine R. Lichtenberg, DO, MPH, FAAFP, MSMA member since 2012, is our new Public Health Editorial Board member. Dr. Lichtenberg is the Physician Director, Enhanced Personal Healthcare Program with Anthem Blue Cross Blue Shield in St. Louis.



MSMA is excited about the opportunity ahead for Mike Kozminski, MD, to present at the first annual World Congress of Urology in China. He's been an MSMA member from St. Joseph since 1990.



Chris Livek, MD, has been a member of MSMA the past two years and is now seeing patients at Lake Regional Clinic - Lake Ozark. (Photo: L.G. Patterson)



Strathmore's Who's Who Registry has recognized Frederick Lobati, MD, of Columbia, for his outstanding contributions and achievements in the field of Healthcare and Healthcare Education. He has been an MSMA member for more than 10 years.

MSMA is proud to have James Lukavsky, MD, as a new member since 2014. He recently recognized Hospice Compassus-Tri Lakes and its programs in Branson and Monett with the William H. Frist, M.D. Award for Outstanding Achievement in Quality Patient Care.

Member since 2003 from Overland Park, KS, Michael Mahoney, DO, presented $5,000 to Hermann Area District Hospital Foundation.

Philip Mataverde, DO, MSMA member since 2012, from Camdenton, now offers appointments in Eldon and Laurie to treat patients with sleep disorders.

The Cameron School District held a ceremony to recognize L.W. McDonald, MD, for his service to athletes of the school district. He is a retired MSMA member who joined in 1977.

John Moore, MD, MSMA member since 2002 from Washington, now offers internal medicine services in Dexter.

The Board of Trustees of Audrain Medical Center met and the trustee's report was given by Peter Perll, MD, who has been an MSMA member since 1996. He also viewed the new linear accelerator being installed in the cancer center.

Yvonne Prince, MD, MSMA member since 1996, has relocated her office in Salem to Physicians Office Building #3.

MSMA wants to congratulate Rick Scacewater, MD, on joining Mercy Clinic Pulmonary in Joplin. His support as an MSMA member since 1985 is very much appreciated.

Troy Scheidt, MD, is helping patients hear better with a comprehensive set of hearing health solutions that go beyond hearing aids, in connection with the Cochlear Provider Network and Woodward Audiology, LLC. He's been an MSMA member since 2006 and practices in Columbia.

Dexter's Chamber of Commerce hosted an official ribbon-cutting ceremony for Saint Francis Clinic, which included new MSMA member Joseph Schuerger, MD.

Congratulations to Shahid Waheed, MD, for joining the cancer center team at SSM Health St. Mary's Hospital - Audrain. MSMA appreciates having him as a member since 1996.



David K. Bean, DO, has been voted favorite medical doctor by O'Fallon Community News voters, and he has been an MSMA member since 1998.

All three of the osteopathic physicians at Complete Family Medicine in Moberly are MSMA members, including Drs. John C. Collins (new member), Nickolas Gillette (new member), and Justin D. Puckett (member since 2008). MSMA shares in the excitement of adding an urgent care facility to their practice.









Liberty Cardiovascular Specialists has a new physician on staff, and also a new MSMA member. Congratulations Daniel Dunker, MD, FACC.

MSMA member since 2008, Robert Ferris, MD, hosted "Ferris Famous BBQ for Babies" on April 8 in Jefferson City.

Congratulations to Marc B. Hahn, DO, FAOCA, on his investiture as the fourteenth president of Kansas City University of Medicine and Biosciences.

MSMA is extremely honored to call William Haynie, MD, of Butler, a member since 1977. Congratulations to him for being nominated for "Missouri Family Physician of the Year" award.



Rebecca Hierholzer, MD, was recognized as Professional of the Year by Capital Who's Who. She is an Missouri Delegate to the AMA, and her support of organized medicine on a state level dates back to 1988.



Honored at William Jewell College's Annual Achievement Day this year was Sarah Hon, MD, of Liberty, and MSMA member since 1999. She received the highest Jewell alumni honor given for contributions to her profession with the Citation for Achievement. (Photo by Kyle Rivas, William Jewell College)





MSMA is very proud of Megan Litzau, who has been a student member for two years. She was selected as a winner of the 2015 American College of Emergency Physicians National Outstanding Medical Student Award. Megan is a sixth-year medical student at UMKC.

Butler News Xpress recently featured Curtis Long, MD, for having a "long list of babies," as he is posed here with just some of the 3,700 babies he has delivered in the last few decades. Dr. Long has been an MSMA member since 1977.

In Memoriam

- Wayne W. Boydston, MD, 82, Odessa, MO
  Family Practice, 2/12/2015
- James C. Redington, Jr., MD, 86, St. Louis, MO
  Internal Medicine, 3/21/2015
- Otto M. Spurny, MD, 88, Kansas City, MO
  Cardiovascular Disease, 4/24/2015
- Frank J. Niesen, MD, 95, St. Louis, MO
  General Surgery, 5/6/2015

Bridget McCandless, MD, has been selected by readers of the *Kansas City Globe* as a nominee among 100 Most Influential Kansas Citians. MSMA is fortunate to have Dr. McCandless as a member since 2011.





Congratulations goes out to Susan Meidl, MD, MSMA member since 1998 from Hannibal, who recently earned her recertification from the American Board of Dermatology.



"Stand Up For Your Heart Health" was published on April 11, 2015, in the *Lee's Summit Tribune* by James O'Keefe, MD, MSMA member since 2003.

Dent County Health Center recently named Yvonne Prince, MD, as medical director. MSMA is privileged to say she has been a member since 1996.

The citizens of Cassville and surrounding areas are fortunate to have Dr. Lisa Roark, MD, practicing in their area, and starting her own direct primary care unit. She has been an MSMA member for the past five years. (Photo by Griff Roark)



David Sommerfeld, MD, and medical staff at Springfield Nephrology Associates have been welcomed by Citizens Memorial Hospital to the CMH Professional Building. Dr. Sommerfeld has been an MSMA member since 2013.

The Scotland County Hospital board of directors recently appointed Randall W. Tobler, MD, FACOG, permanent CEO of the organization in Memphis, MO. MSMA is proud to call him a member since 1981.




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UMKC School of Medicine

Advancing Health by Producing Leaders in Medicine

by Steven L. Kanter, MD

UMKC School of Medicine, through its educational and research programs, aims to provide a rich environment in which each student and resident can develop to his or her full potential.



Steven L. Kanter, MD, is Dean of the University of Missouri - Kansas City School of Medicine.
Contact: kantersl@umkc.edu

The University of Missouri's medical school in Kansas City is producing leaders in patient care, research, education, organized medicine, the military, industry, and government. Even though the school has been in existence only 44 years, there is growing evidence that its graduates gravitate to leadership roles. A few examples of the current positions that alumni hold include surgeon general of the U.S. Air Force, deputy director of the National Institute of Child Health and Human Development, and chief executive officer of the American Academy of Pediatrics. And there are many more.

These leaders, as graduates of the University of Missouri-Kansas City (UMKC) School of Medicine, are products of a premier accelerated, dual-degree program in medical education. It is an accelerated program because students complete an MD degree six years after finishing high school (compared to eight years for students pursuing an MD degree in the classic American model, which is four years of medical school following four years of college). It is a dual-degree program because graduates receive both a bachelor's and an MD degree.

The doors of UMKC School of Medicine opened in 1971. During the planning stages, the school's founders made a conscious decision to create a different kind of medical school. In addition to admitting students directly from high school, the school instituted a docent system. From the very first day of medical school, students are assigned to Docent Teams of approximately 12 students. A faculty physician, or docent, serves as a mentor, teacher, and advisor as the student advances through the curriculum.

Students remain in the same team for the first two years of medical school. Then, in the third year, students join a new docent team that includes a mix of students in years three through six. The Docent is joined by other health care professionals (e.g., a nurse, clinical pharmacist, medical librarian, social worker, and/or dietician) to provide support and supervision as the students continue their intellectual, emotional, and moral growth in an environment that enables each student to develop to his or her full potential.

The Docent system takes the very best of apprenticeship learning and combines it with small

group learning, mentoring, peer teaching, and other techniques. It has been a highly valued model at UMKC School of Medicine for 44 years. The longitudinal continuity clinic experience is also one of the hallmarks of the program which continues today.

The current national dialogue on medical education emphasizes that it takes too long, and is too expensive, to train a physician. UMKC School of Medicine addresses these issues directly and effectively by graduating, six years after high school, fully educated physicians who match in competitive programs and are highly rated by their residency program directors. And, as noted above, a notably large number move into leadership positions, often early in their professional careers.

Another theme in the current national conversation on medical education is that faculty often are frustrated that students no longer attend class because they can watch lectures via downloadable or streaming video. But, in my view, the key question that underlies this tension is not about student attendance. Rather, I believe, it raises key questions about the value of the learner-teacher relationship. What is the value of having a group of learners, small or large, come together with one or more teachers in the same place at the same time? How can medical educators make the learner-teacher relationship worthwhile for students and rewarding for faculty?

The Docent system of medical education at UMKC School of Medicine offers an innovative approach to addressing these important questions. The one-on-one and one-on-few experiences among students and faculty provide essential opportunities for students to construct meaning around the knowledge they gain from watching online videos and to focus on learning how to use information, how to approach ambiguity and uncertainty, and how to think critically about problems in medicine and biomedical science.

Positioned for Growth

UMKC School of Medicine is at a pivotal point in its history. It is nearing the end of its first half-century of existence and that raises important questions about what should be the directions and strategies and goals for its second 50 years.

The school has a number of strengths that position it well for significant growth in the coming years. It is located in the heart of a vibrant city that has much to offer. It is an anchoring institution on a health sciences

Steven L. Kanter, MD



A leader in medicine, biomedical informatics, and medical education, Steven L. Kanter, MD, became the eighth dean of the University of Missouri-Kansas City School of Medicine on Oct. 1, 2014. He also is a professor of biomedical and health informatics, a professor of medicine, and the Merle and Muriel Hicklin/Missouri Endowed Chair in Medicine.

Dr. Kanter was previously the vice dean and a professor of medicine at the University of Pittsburgh School of Medicine. From 2008 to 2012, he served as editor-in-chief of Academic Medicine, the peer-reviewed journal of the Association of American Medical Colleges.

Dr. Kanter earned a bachelor's degree in chemistry at Texas A&I University. He received a medical degree from the University of Texas School of Medicine in San Antonio and trained in neurological surgery at the University of Florida. After finishing his residency, Dr. Kanter worked as a neurological surgeon at a large multispecialty clinic and hospital in Temple, Texas, which served as the primary teaching institution for Texas A&M University College of Medicine.

In 1992, Dr. Kanter completed a fellowship in medical informatics at the University of Pittsburgh through the National Library of Medicine. That same year, he became the founding director of the Office of Medical Education at the University of Pittsburgh School of Medicine.

Dr. Kanter's awards and honors include the Merrell Flair Award, the highest honor awarded by the Association of American Medical Colleges' Group on Educational Affairs. His contributions reflect a breadth and depth of knowledge and experience with medical school, teaching hospital, and university issues.

campus that includes Truman Medical Centers (which provide critical safety-net services for the region), Children's Mercy Hospital, the Center for Behavioral Medicine, the Kansas City Health Department, and UMKC's schools of Nursing, Pharmacy, and Dentistry. The layout of the health sciences campus lends itself to the kind of communication and collaboration that is so important to advancing thinking and practice in health care, research, and education. Saint Luke's Health System, Research Medical Center, and the Kansas City VA Medical Center are essential partners located minutes from the health sciences campus and offer students and residents outstanding educational experiences in patient care and research.

UMKC School of Medicine continues to develop programmatic research strength in health outcomes, biomedical informatics, Big Data and analytics, patient safety, and neighborhood health in addition to individual excellence in selected areas of biomedical science. Research collaboration extends to other medical schools in the area. Earlier this year, UMKC, the University of Kansas Medical Center, and Kansas City University of Medicine and Biosciences announced the creation of a consortium to focus on research of musculoskeletal disorders and diseases. This initiative provides opportunities to combine individual strengths and resources of the three health sciences schools to advance translational research. The School also is an academic partner in the NIH-funded Heartland Institute for Clinical and Translational Research and in the Kansas City Area Life Sciences Institute.

We continue to broaden our degree and certificate programs. The UMKC School of Medicine currently offers three master's degree programs: a Master of Medical Science in Physician Assistant studies, a Master of Science in Anesthesia, and a Master of Science in Bioinformatics. An interdisciplinary PhD program allows students to integrate clinical research skills into their doctoral programs. And, in collaboration with the School of Education, the School of Medicine offers a master's degree in Health Professions Education.

Looking Ahead

There is no question that there are significant challenges in medicine today. Reimbursement issues for patient care activities, under-funding of biomedical research, health inequities, patient safety concerns, ethical dilemmas raised by new technological capabilities, physician workforce projections, and other factors create risk for both mission and margin at academic health centers.

But, this is an exciting time in medicine and biomedical science. In every medical specialty, physicians can do more for patients today than ever before. In biomedical science, we have learned more in the past decade than in all of science theretofore. Scientific and technological advances enable more accurate diagnoses, which lead to more precise therapeutic interventions. Perhaps even more importantly, innovation in science and technology is beginning to enable prediction and prevention of threats to health.

UMKC School of Medicine, through its educational and research programs, aims to provide a rich environment in which each student and resident can develop to his or her full potential, is prepared to pursue the opportunities presented by the aforementioned challenges, and has the knowledge and skills to advance thinking and practice in health care and the health sciences. **MM**

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- Neurology
- Neurosurgery
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- Podiatry
- Psychiatry
- Pediatrics
- Pediatric Emergency Medicine
- Pediatric Endocrinology
- Pediatric GI
- Pediatric Hem/Onc
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- Pediatric Neurology
- Pediatric Surgery
- Pediatric Urgent Care
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- Pulmonology/Critical Care/Sleep Medicine
- Radiation Oncology
- Radiology-Interventional
- Rheumatology
- Robotics
- Trauma Surgery
- Urology
- Vascular Surgery

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Executive Director of Physician Recruitment • Mercy Clinic
Phone: 877-880-6650 | Fax: 888-290-8300
Email: angie.abraham@mercy.net

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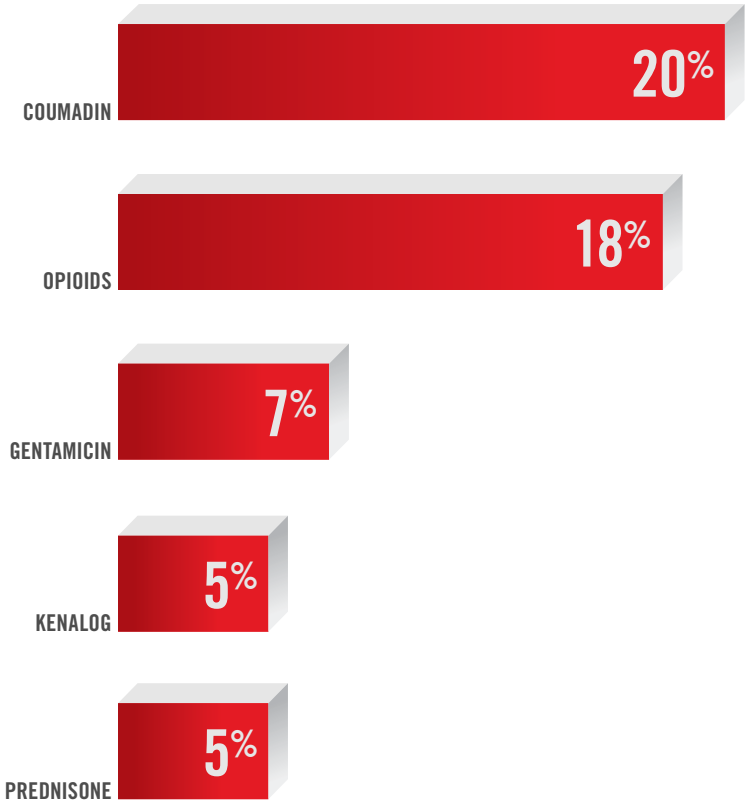
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Updates in Emergency Medicine: 2015

by Matthew Gratton, MD

The articles in this UMKC Emergency Medicine series should give physicians a good look at the depth and breadth of Emergency Medicine as practiced today. We also believe our articles will provide practical information on urgent clinical situations that physician frequently encounter.



Matthew C. Gratton, MD, MSMA member since 2001, is Professor and Chair of the University of Missouri - Kansas City School of Medicine and Truman Medical Centers.
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I thank *Missouri Medicine* for allowing me to be "Guest Editor and Coordinator" for our University of Missouri-Kansas City (UMKC) School of Medicine seven-article theme issue on Emergency Medicine. According to the American College of Emergency Physicians (ACEP), "Emergency Medicine is the medical specialty dedicated to the diagnosis and treatment of unforeseen illness or injury."[1] Of course, unforeseen illness and injury have a history as old as the human race, but formal recognition did not occur until the American Board of Medical Specialties (ABMS) recognized Emergency Medicine (EM) as the twenty-third medical specialty in 1979.[2] W. Kendall McNabney, MD, a trauma surgeon recently returned from Vietnam, founded our Emergency Medicine Residency Program and the Academic Department at Truman Medical Center and UMKC School of Medicine in 1973. While he would argue with the description of himself as a "visionary," at least one can say that he had a lot of faith in the need for intensive and appropriate training in the emergent care of the ill or injured. Otherwise how could he found a training program for a specialty that did not yet exist? Others agreed and, though, our EM Department was not the first residency program, (University of Cincinnati, 1970[2]) it was one of the first few.

The growth of the specialty has been phenomenal with 31,395 American Board of Emergency Medicine (ABEM) Diplomates certified as of July 2014, and according to the Association American of Medical Colleges (AAMC), there are over 37,000 physicians actively practicing EM (2013.)[3,4] This makes Emergency Medicine the seventh largest specialty in the nation.[4] Emergency Medicine has the fifth largest number of first year residents as of 2013 behind only Internal Medicine, Family Medicine, Pediatrics and General Surgery.[4] Additionally, there are presently 167 accredited residency training programs and 85 full Academic Departments of Emergency Medicine at US medical schools.[3] This growth speaks to the importance and the utility of Emergency Medicine in the 21st Century. Indeed, Americans "voted with their feet" by visiting the ED 131,000,000 times in 2011.[5]

Pediatric Emergency Medicine was the first subspecialty of Emergency Medicine and was recognized in 1991 by the ABMS.[2] The Fellowship Program at Children's Mercy Hospital in Kansas City was one of the first fellowships and was founded in 1981, ten years before the specialty officially existed.[6] Two of our articles come from that program. Doctors Jayamaha and Connors discuss the management of pediatric foreign body ingestions. Most foreign bodies are harmless and treated by watchful waiting, but some can cause potentially life-threatening complications and must be removed immediately. Doctors Canty and Davis discuss the diagnosis and management of sports-related concussions. More sports-related concussions are reported than ever before. The indications for diagnostic imaging have been fairly well delineated in recent studies, but controversy over the use of neurocognitive testing continues. The article outlines a common sense approach to diagnosis and treatment.

The Emergency physician must be able to separate the patient with potentially worrisome symptoms who is actually "well" from the patient who is, in fact, "sick." This can be challenging in a patient with non-specific complaints such as dizziness, weakness, nausea, and vomiting. Doctor Go will discuss the approach to a patient with vague complaints who may be having a posterior circulation stroke. As medical care becomes more complex, more and more physicians may be involved with a given patient and this multiplies the number of times care is transitioned from one provider to another. Communication problems during hand-offs in patient care are considered one of the most common causes of patient safety breakdowns. Doctors Sullivan, Inboriboon and Bridgford will discuss transitions in care and ways to improve communication during transitions.

Medical toxicology was the third subspecialty of Emergency Medicine, and was recognized by ABMS in 1992. Doctors Algren and Christian, both Board Certified in Emergency Medicine and Toxicology, will discuss the utilization of drug screens in the Emergency Department. The immunoassays used in the most common urine drug screens for drugs of abuse frequently have false positive and/or false negative results. They will describe the appropriate use of these tests. Technology is frequently used to augment the physical examination. The use of bedside ultrasound by the practitioner to supplement the clinical exam has become common in the Emergency Department and all EM Residents must be trained in and demonstrate facility with basic ultrasound examination skills. Doctors O'Rourke, Kibbee and Stubbs will discuss the utilization of bedside ultrasound to aid in the diagnosis of skin and soft tissue infections, specifically how it is used to find fluid collections and thus help to guide appropriate treatment. Finally, Emergency physicians know too well the effects of a sexual assault on a survivor. Dr. Subramanian and Jennifer Green, RN, a Kansas City Sexual Assault Nurse Examiner, describe how those who proivide medical and forensic care must always be prepared to provide testimony as either a fact and/or expert witness.

As Emergency Medicine has flourished, multiple subspecialties have been developed by and/or opened to board certified Emergency Medicine Physicians. In addition to the above, these include: Critical Care (via Anesthesia, Internal Medicine or Surgical pathways,) Emergency Medical Services, Hospice and Palliative Care, Pain Medicine, Sports Medicine, Undersea and Hyperbaric Medicine, Brain Injury, and Clinical Informatics. The articles in this series should give you a good look at the depth and breadth of Emergency Medicine as practiced today. I hope to be around in another 35 years to see what's happening in Emergency Medicine on its 70th Anniversary!

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MM

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Managing Pediatric Foreign Body Ingestions

by Dharshinie Jayamaha, MD & Gregory P. Conners, MD

Foreign body ingestion is common in childhood, and may be a potential health risk.



Dharshinie Jayamaha, MD, (left) and Gregory P. Conners, MD, MPH, MBA, FAAP, FACEP, (right) are in the Division of Emergency and Urgent Care at Children's Mercy Hospitals and Clinics in Kansas City and in the Departments of Pediatrics and Emergency Medicine at the University of Missouri-Kansas City School of Medicine in Kansas City, Mo.
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Abstract

Foreign body ingestion is common among children. A variety of foreign bodies are ingested, most of which are harmless and pass spontaneously through the gastrointestinal (GI) tract. There are a few particularly harmful and life threatening objects that should be identified and removed immediately to avoid serious complications.

Background

As far back as 1692, when the Crown Prince of Brandenburg, Frederick the Great, swallowed a shoe buckle at four years of age, case reports of foreign body ingestions have been common in the pediatric literature.[1] Coins are the most commonly swallowed objects (other than food), followed by small toys, metal objects and other more concerning foreign bodies such as magnets and button batteries.[2,3] Most objects pass through the GI tract easily. They may cause little or no sequelae, but some ingested objects (e.g., button batteries, magnets), if not discovered early, can cause significant morbidity and mortality. The challenge to the emergency physician is to avoid over-testing and over-treating, while recognizing and intervening for high-risk foreign body ingestions.

Epidemiology

Because toddlers and preschoolers explore the world with their mouths and are developing fine and gross motor skills, they are responsible for the majority of pediatric foreign body ingestions.[4] Older children, most commonly boys, also ingest foreign bodies, typically due to poor situational decision-making.[5] Over 100,000 emergency department (ED) visits are made annually for foreign body ingestions.[6] Ingestions may also be brought to the attention of primary care physicians, urgent care providers, or poison control centers. A large majority of cases are either unrecognized, or are managed at home without the involvement of health care professionals.[7]

Pathophysiology

The large majority of foreign bodies ingested by children pass through the GI tract without complication. The most common complication of foreign body ingestion is impaction within the GI tract; the esophagus is the most common site of foreign body impaction. Although complications of foreign body ingestion may be seen in any child, patients who have underlying GI tract abnormalities or who have ingested high risk objects (e.g., button batteries, pointed or

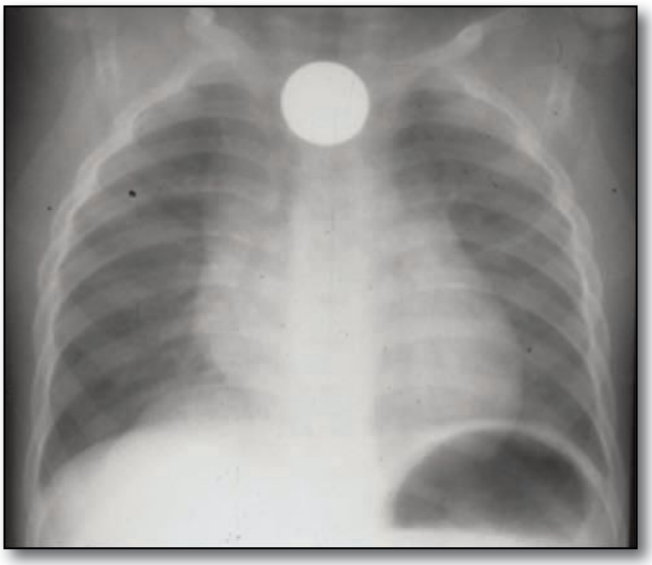


Figure 1: Coin impacted at the thoracic inlet.



Figure 2: Coin impacted at the level of the aortic arch.

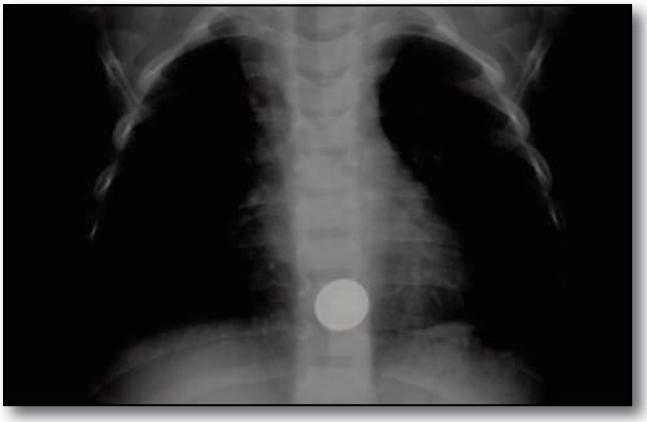


Figure 3: Coin impacted at the gastro-esophageal junction.

sharp objects, or small, powerful magnets) are at the highest risk of health problems related to foreign body ingestion.[8]

There are three distinct sites within the esophagus where foreign bodies are predisposed to become impacted due to esophageal narrowing. (See Figures 1, 2, 3.) The most common site of impaction, representing about 70% of esophageal impactions, is at the thoracic inlet, with the remainder about equally divided between the levels of the aortic arch and of the gastroesophageal (GE) junction area.[2,4] The thoracic inlet, near the first portion of the esophagus, is where the skeletal muscle transitions to smooth muscle and the cricopharyngeus muscle. On chest radiography, the impacted object is seen at the level of the clavicles. Objects impacted at the level of the aortic arch are seen at the level of the carina on a chest radiograph. Objects impacted at the GE junction are seen just above the stomach bubble on a chest radiograph. Children with abnormal esophageal anatomy or function, such as those who have had tracheoesophageal fistula surgical repair, are at greatest risk of esophageal foreign body impaction.[9]

Once an object has passed to the stomach, it will likely pass on its own. No intervention is needed unless significant signs or symptoms are experienced, which may be due to previously-unsuspected anatomic abnormalities of the GI tract. Exceptions include objects that are too long to traverse the pylorus, sharp or pointed objects, and those that are not chemically or physically inert. Children with known or suspected GI tract abnormalities, such as those who have had surgery or with motility issues, are at special risk, and should be referred to a pediatric gastroenterologist or general surgeon, for endoscopy.

History and Physical Examination

Children frequently are brought in for care of foreign body ingestions after witnessed ingestion or disclosure of having swallowed something. Key elements of history should include what was ingested and when the event may have occurred. This information is not always possible to obtain, but trying to tease out a good timeline and the nature of the swallowed objects allows providers to understand whether immediate action is needed or not. An understanding of the level of supervision and prior similar episodes also helps clinicians evaluate for potential neglect or mental/cognitive impairment.

Most children are asymptomatic after ingestions. If they are symptomatic, the presenting signs and symptoms may include: vomiting, apparent choking, drooling, gagging, pain, foreign body sensation, dysphagia or food refusal.[10] Physical examination is typically non-contributory, may reveal unswallowed saliva, or an occasional foreign body lodged in the posterior pharynx. A search of the ears and nose for additional foreign bodies is sometimes revealing.

Identification of Ingested Foreign Bodies/ Diagnostic Studies

Goals of imaging include identification and localization of the swallowed foreign body, and to identify children who require intervention due to ongoing or potential morbidity.

Coins: The Management of Change

Coins are the most frequently swallowed foreign bodies in children, comprising as much as 80% of swallowed pediatric foreign bodies coming to medical attention.[11] Metallic, radiopaque, blunt and inert (except rare cases of nickel allergy), swallowed coins usually do not cause significant morbidity if ingested unless they become impacted, which typically occurs in the esophagus. Thus, an important goal of assessing the child who has swallowed a coin is to determine whether or not it is in the esophagus. Since children with esophageal coins are often asymptomatic, we suggest imaging of all children who have swallowed coins who present to an ED.

Radiography

The initial evaluation of most children in the Emergency Department suspected of swallowing a non-food object will include plain films. The majority of these objects are radiopaque, and therefore radiography is an effective means of demonstrating their presence and location.12 PA and lateral films of the neck and chest are particularly useful for coin ingestions. Esophageal coins typically appear en face (ie, a white disk) on the PA film and as a white line segment on lateral film (See Figures 1, 2, 3). Coins that appear on-edge on the PA film and en face on the lateral film may, instead, have been aspirated and be in the trachea.

The presence of a foreign body in the esophagus on a radiograph should prompt obtaining a lateral chest film, if this was not initially done. A lateral view helps confirm both the nature and location of the object. What appears to be a coin on a frontal view may laterally show the typical two-level appearance of button battery (See Figure 4B), or of adherent coins. Objects apparently in the esophagus may actually be in the more anterior trachea. Free air or local swelling may suggest complications.

Patients who may have ingested radiolucent objects may require additional imaging, such as an esophagram, or be better served by proceeding directly to endoscopy. CT or other forms of advanced imaging may be useful in children who are symptomatic but whose initial imaging studies are negative.

It is not unusual for radiographic evaluation of fever, cough, or another medical problem to reveal an "incidental" foreign body. There are numerous reports of swallowed objects remaining in the esophagus for months or even years. These children should be referred to a pediatric gastroenterologist or general surgeon for evaluation, as they are at high risk for complications of a removal procedure.

Use of a hand held metal detector may eliminate the need for radiography, thus avoiding exposure to ionizing radiation. Use of this technology is simple and effective, as long as the patient does not have any other metal on or in the body, nor in close vicinity in the room. Metal detectors have been shown to have high specificity and sensitivity in identifying location of metal foreign bodies such as coins.[13] The most beneficial use of the hand-held metal detector is to determine whether the location of the foreign body is above the diaphragm (essentially, within the esophagus) or below it. Results suggesting an esophageal coin typically are confirmed with a traditional radiograph. While they work well in coin ingestion, hand held metal detectors have limited utility in obese patients or those who have ingested a very small metallic, or non-metallic object, so one should not rely solely on it to determine if a metal object was ingested. Diagnostic use of hand held metal detectors, however, is not yet widespread, with most institutions moving directly to radiography.

Interventions

The nature of a swallowed foreign body, its location, and the child's health status dictate management. The principal goal of managing children with foreign body ingestions is to prevent (further) complications. Children with lower GI tract foreign bodies who have symptoms or signs suggesting complication (typically perforation or obstruction) should be discussed with a pediatric gastroenterologist or general surgeon.

Lodgment within the esophagus is associated with risk of such complications as esophageal obstruction, mucosal scarring, perforation, or migration, leading to mediastinitus or even creation of an aorto-esophageal fistula.

Inflammatory changes may be seen in as few as 12 hours. Thus, therapy should be aimed at early removal of esophageal foreign bodies, either through their removal or advancement into the stomach. While medications, such as glucagon and diazepam, have been used in adults with lower esophageal meat impaction, this has not been shown to be successful in children.[14,15] Inducement of emesis is associated with potential aspiration risk. Thus, non-pharmacologic techniques are currently used for removal or advancement of esophageal foreign bodies.

Interventions Aimed at Removal of Esophageal Foreign Bodies

Foley Catheter technique

A healthy child with a round or blunt foreign body, such as a coin, can have it removed by this easy and cost-effective means. A Foley catheter is gently passed beyond the object, typically using fluoroscopic guidance. The balloon is then inflated, and the catheter is gently withdrawn with the balloon with the hope of drawing the object back into the mouth. To prevent inadvertent airway obstruction by the dislodged coin, the child should be placed in the Trendelenberg position, and instructed to spit out the coin. This technique should not be used to remove sharp or pointed objects. Repeated attempts after a failed one, or the use of multiple catheters, should be avoided for concerns of causing esophageal injury. This technique is generally recommended only in the first 24 hours following ingestion.[16]

Endoscopy/Esophagoscopy

Endoscopy remains the most common technique for removal of esophageal foreign bodies. It is the procedure of choice for removal of objects from uncooperative children or those with important health problems, and for removal of objects that are sharp, pointed, or have been actually or potentially in the esophagus for over 24 hours. Endoscopy is extremely safe and effective.

Endoscopic removal has certain advantages. It serves both diagnostic and therapeutic purposes. The extent of esophageal injury can be assessed at the same time of removal. However, endoscopy is costly, since it is performed under general anesthesia or deep sedation, and requires specialized equipment and providers (i.e. pediatric gastroenterologists, otolaryngologist or surgeons).[16,17]

Interventions Aimed at Advancement of Esophageal Foreign Bodies

Bougienage

Bougienage is the gentle passage of a flexible esophageal dilator, or bougie, into the esophagus, through either the nose or mouth, to a depth estimated to advance a blunt object to the stomach. The principal advantage of bougienage is that is can be done quickly, effectively, and safely by trained emergency physicians, and does not require sedation or anesthesia. Bougienage should not be performed on children with underlying esophageal abnormalities or if the object has been present for more than 24 hours. Since the object must then traverse the GI tract, it should not be used for sharp, pointed, or large or long foreign bodies, nor should the technique be used in children with abnormalities of the stomach or lower GI tract. Failed procedures should not be repeated; instead, the child should be referred for endoscopy. Once the procedure is completed, children may be treated as would other children with gastric foreign bodies.[17]

Spontaneous Passage

Children with blunt esophageal foreign bodies may experience delayed spontaneous passage of the object into the stomach. This has been well described in the case of esophageal coins. Spontaneous passage typically occurs within the first few hours of foreign body ingestion, most commonly with objects lodged at the gastroesophageal junction. Administration of food or drink may enhance this process, but must be balanced against the risk of a "full stomach" should other removal procedures, such as endoscopy, be required. [10,18]

Special Foreign Bodies

Button/Disc Batteries[19]

Button batteries are found in a variety of objects, such as hearing aids, watches, calculators, and other small devices. As their use has grown greatly over

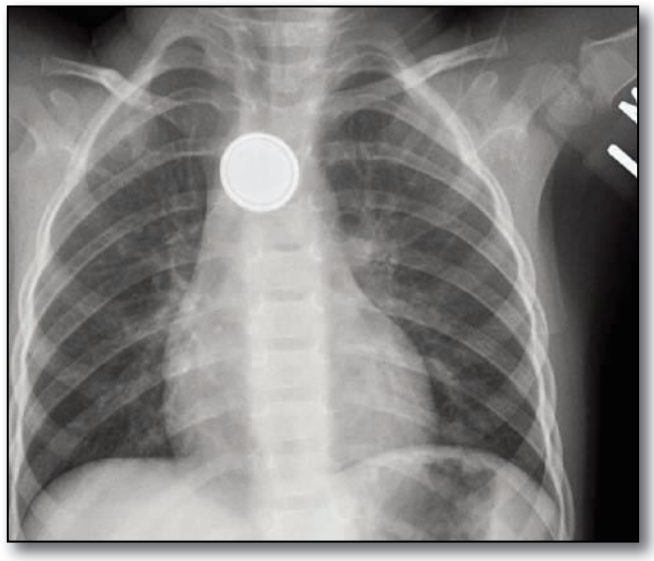
the past several years, so has the opportunity of their discovery and ingestion by children. Button batteries typically only cause damage when lodged, such as in the ear, nose, vagina, or esophagus; once in these locations, tissue damage occurs in just a few hours, and maybe quite severe. Button batteries are easily swallowed and may be confused with coins when ingested or seen on radiographs. They do, however, have a distinctive appearance on frontal ("circle within a circle") and lateral ("two-layer" profile) radiographs. (See Figures 4A, 4B.) These may be missed when the battery is imaged obliquely, or is very small.

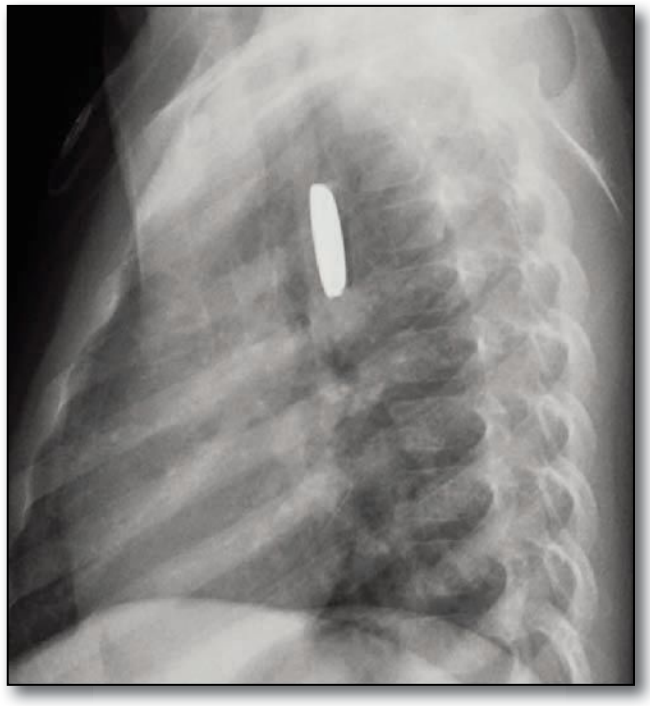
Complications of button battery ingestion are believed to be due to a combination of pressure necrosis and the creation of a local current in a moist, mucosal environment. Damaged batteries may also leak toxic contents. Large lithium batteries are most dangerous, but any button battery, even those discarded as "dead," may cause important injury. Management of esophageal button batteries should include their immediate removal by endoscopy, which allows both removal and inspection for tissue injury. Children with button batteries in the stomach and lower GI tract may be observed, as they are typically safely passed without complication. Children with abnormal GI tract anatomy or function should be discussed with a pediatric gastroenterologist or surgeon.

The National Battery Ingestion Hotline, at 202-625-3333, can provide valuable information regarding management of button batteries, including information regarding battery type if the ID number is available.[20]

Pointed / Sharp Objects

Ingestion of pointed objects (e.g., a push pin) or those with a sharp edge (e.g., a razor blade) carries an associated risk of perforation of the GI tract. Smaller objects like thumb tacks may become embedded in the esophagus. Perforation can lead to contents spilling into the peritoneal cavity causing significant consequences such as peritonitis or mediastinitis. Sewing needles are notoriously associated with GI perforation. These objects should be removed endoscopically from either the esophagus or stomach. Special devices have been designed to close or cover open safety pins in order to prevent perforation during removal via endoscopy. Management of children with sharp or pointed foreign bodies in the lower GI tract should be discussed with a pediatric gastroenterologist. Fortunately, unless they are very sharply pointed, small pieces of broken glass are not typically associated with GI tract perforation.





Figures 4A & 4B: Button battery lodged in the esophagus. Figure 4A (above): "Circle in circle" pattern on PA view. Figure 4B (below): "Two-layer" pattern on lateral chest x-ray.

Long Objects

Swallowed objects longer than 4-6 centimeters often become lodged in the stomach. Thus, they will require endoscopic removal. The circumstances of ingestion of long objects should be investigated, as it may be a sign of psychiatric disorder. The presence of an esophageal toothbrush has been termed "a radiologic clue of bulimia."[21]

Small Magnets

Magnet ingestion has caused increased concern over recent years and have been the focus of several publications. Separately ingested small magnets strongly attract each other across the bowel, causing bowel wall necrosis/perforation, fistula formation, obstruction or volvulus. Many children have required surgery; deaths have been reported. Small magnets are found in toy sets, jewelry sets, and building sets, and may be ingested in multiples or with other metallic objects. The popular magnet toy "Buckyballs" were recently voluntarily recalled due to injury risk.[22]

Swallowed magnets may also be attracted to other metallic objects. Cases of combined button battery/small magnet ingestion, an exceptionally dangerous combination, have been reported.[23] Children who have ingested small magnets or magnets and other metallic objects should have abdominal radiography performed; if verified, their care should be discussed with a pediatric gastroenterologist or general surgeon.

Prevention

The ideal management of foreign body ingestion is its prevention. As noted in the 2010 American Academy of Pediatrics Policy Statement on the Prevention of Choking Among Children,[24] caregiver education and attention to toy safety are vital to preventive measures. Pediatricians should include anticipatory guidance on prevention and safety to parents during every well child visit. Emergency physicians should capitalize on a visit for foreign body ingestion as a "teachable moment" regarding appropriate toys and foods.

The United States Consumer Product Safety Commission is a valuable resource for families and physicians. It enforces toy regulations and recalls for the safety of children.

Conclusion

Foreign body ingestion is common in childhood, and may be a potential health risk. Coins are the most commonly ingested non-food item. Children with GI tract abnormalities are at highest risk of complication. Most foreign bodies traverse the GI tract and are eliminated without complication, but some become lodged in the GI tract, most commonly in esophagus, often requiring removal. Ingestion of button batteries, pointed, sharp, or long objects, or small magnets presents special risks. As is the case with all injuries, education and injury prevention are important deterrents.

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Disclosure

None reported. **MM**

Are Sports-Related Concussions Giving You a Headache?

by Justin Davis, MD & Greg Canty, MD

Optimal management starts with a thorough evaluation aimed at accurate diagnosis of concussion and exclusion of co-morbid injuries and life-threatening conditions.



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Abstract

Acute care visits for sports-related concussion (SRC) are increasing dramatically in adolescents. This review summarizes current concepts in the evaluation and management of pediatric SRC by health care providers in the acute care setting.

Introduction

Caring for the increasing number of adolescents who present for acute care visits due to sports-related concussion (SRC) is challenging for several reasons. First, despite a rapidly growing body of literature devoted to concussion, uncertainty exists about everything from the definition of concussion to the important aspects of medical evaluation, treatment, return to play decisions, and prognostic expectations. Therefore, our goal is to review the current literature relevant to the management of concussion in adolescents in the acute care setting. There are several sources for concussion management guidelines, the most prominent of which is the consensus statement from the International Conference on Concussion in Sport in Zurich (Zurich Consensus Statement).[1] The fourth update of the consensus statement, published in 2012, defines SRC as a brain injury induced by biomechanical forces resulting in clinical symptoms that are not necessarily the result of a gross pathological injury.[1] Diagnostic features of concussion are summarized in Table 1.

Of note, loss of consciousness is not required for the diagnosis of concussion and occurs in less than 10% of adolescent SRC. Although neuropathological changes can result, results of standard structural neuroimaging studies are normal. The use of multiple terms such as concussion, mild head injury, mild traumatic brain injury, and commotio cerebri to describe overlapping processes is potentially confusing. In fact, Weber et al., found that the terminology used by practitioners to discuss concussion altered patients' expectations about course and prognosis.[2] Accordingly, the need to categorize concussions as simple versus complex or to assign a concussion grade (such as the former American Academy of Neurology Concussion Grades and the Cantu Guidelines) has been abandoned.[1] Instead, the emphasis has been placed on treating each injury independently without assigning a grade of any kind. Grading concussion has not proven to be beneficial and does not help to predict outcomes.

Table 1
Diagnostic Criteria for Sports-Related Concussions

Criteria	*Description*
Blunt trauma to the head	Either direct trauma to the head or somewhere else on the body with an "impulsive" force transmitted to the head.
Impairment in neurologic function	Rapid onset, temporary
Symptoms and/or signs in one or more of the following domains:	Symptoms: Somatic (eg, headache) Cognitive (eg, fogginess) Emotional (eg, lability) Signs: Loss of consciousness Amnesia Behavioral changes (eg, irritability) Cognitive impairment (eg, slowed reaction time) Sleep disturbance (eg, insomnia)

Epidemiology and Pathophysiology of Sports-Related Concussions

Despite the fact that many injuries are not reported or do not result in an emergency department visit, we know emergency department visits for sports-related concussion in children are increasing dramatically nationwide[3,4] and in Missouri (See Figure 1)[5]. Nationally, An estimated 502,000 emergency department visits for children (age eight to nineteen) occurred over a five-year period from 2001 to 2005, one-third of which occurred in the eight to thirteen year-old age group. Half of these injuries occurred in organized sports participation. From 2001 to 2005, ED visits for concussion more than doubled.[3]

Similar to trends throughout the United States, football is the most common sport associated with concussion in Missouri according to the latest Missouri State High School Activities Association Interscholastic Youth Sports Brain Injury Prevention Report, but many other sports have seen a tremendous increase in concussion reporting, such as wrestling, hockey, rugby, soccer and bicycling (See Figure 2).[5] There is increasing interest in the potential modifying factors of age, gender, and genetic factors. The consequences of concussion may be different in the younger athlete[6] and these potential differences will be highlighted throughout this article. Notably, the Zurich consensus statement guidelines are meant to apply to adolescents (13 or older) and adults. Gender may be a modifying factor but there has been conflicting evidence and no current consensus.[1] Among several possible genetic modifying factors, specific genotypes of the Apolipoprotein E4 allele have been associated with a greater risk of concussion and worse outcomes.

The mechanism of injury for concussion typically involves either acceleration-deceleration or focal impact. Concussion is considered to be a functional and metabolic injury rather than a structural injury. Proposed pathologic mechanisms include axonal stretch and shear, changes in the function of various ion channels, and alterations in the release of various neurotransmitters. Although no brain ischemia exists, there is thought to be an imbalance in energy needs and production. On a cellular level, there is recovery over a brief period of time but a small number of cells may degenerate and die.

Evaluation of Suspected Sports-Related Concussion in the Acute Care Setting

The evaluation of suspected sports-related concussion in the acute care setting starts with a thorough medical exam with particular attention to mental status, any neurologic deficits, cognitive functioning, gait, and balance. A determination of whether symptoms are improving or worsening is important when considering alternative diagnoses or more severe traumatic brain injuries. Of note, there is considerable overlap of post-concussion symptoms with other diagnoses (e.g., depression, ingestion, non-head injuries). Relevant historical factors should be recorded such as the mechanism of injury, witness accounts if available, type of protective equipment used, history of prior concussions, and/or concussive symptoms. In addition, particular attention should be given to the possibility of cervical spine injury.

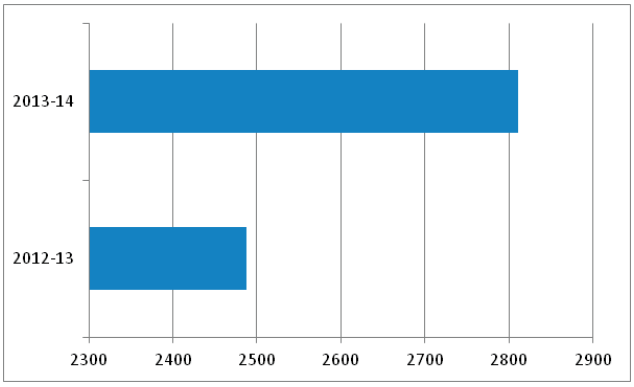
Are neurocognitive tests or standardized concussion assessments useful in the acute care setting?

The most well known of these tests are the sport concussion assessment tool (SCAT) and the immediate post concussion assessment and cognitive testing (ImPACT) program but there are several others and many of the tests are multi-faceted. Although use of such tests is on the rise,[7] the usefulness of such tests in the emergency department is not well established. In one study, significant disagreement has been demonstrated between several different tests.[8] In another study, one of the tests (the standardized assessment of concussion) did not differentiate between patients with head injury and controls with minor extremity injuries.[9] Furthermore, initial test scores (ImPACT, Acute Concussion Evaluation Screening Tool, and the AAN and Cantu guidelines) did not correlate with outcomes in a recent study performed in a pediatric emergency department.[10]

Is neuroimaging necessary?

Conventional neuroimaging is normal in concussion[1] and CT scans should only be performed when needed to exclude intracranial hemorrhage, skull fracture or cervical

Figure 1
Number of brain injuries reported to the Missouri State High School Activities Association in the top 7 head injury sports, 2013-14 versus 2012-1325



spine fracture. Children with significant alteration in mental status (Glasgow Coma Scale [GCS] of less than 13) are at higher risk of a structural brain injury and neuroimaging is typically performed in these situations. The indications for emergent CT in cases of mild traumatic brain injury (GCS 14-15) have been the subject of several recent prospective cohort studies where clinical decision rules were developed to help identify patients at higher risk for significant structural injuries.[11,12] The decision rule commonly used in the pediatric acute care setting in the United States was developed in a multi-center, prospective cohort study of children presenting within 24 hours of head trauma and GCS of 14 or 15 that was conducted by the Pediatric Emergency Care Applied Research Network (PECARN).[11] In a recent prospective comparison of three decision rules (PECARN, Canadian Assessment of Tomography for Childhood Head Injury [or CATCH] and Children's Head Injury Algorithm for the Prediction of Important Clinical Events [or CHALICE]) at a single pediatric emergency department in Denver, Colorado, the PECARN decision rule was the only one that identified all clinically important traumatic brain injuries but there was no statistically significant difference in the sensitivities of the three decision rules.[12] Various advanced neuroimaging techniques (such as magnetic resonance imaging [MRI], functional MRI, diffusion tensor imaging [DTI], magnetic resonance spectroscopy, magnetoencephalography, single-photon emission CT [SPECT], and positron emission tomography [PET]) have shown promise in the evaluation and management of SRC, but routine use of these tests has not been validated. Similarly, the use of various blood biomarkers such as s-100, myelin basic protein and neuron-specific enolase in the identification and management of SRC has shown some promise, but current evidence is not sufficient to justify routine use.[1]

Treatment of Sports-Related Concussion Symptoms

There are no standard recommendations for pharmacologic treatment of SRC-related symptoms and no pharmacotherapy has been shown to speed recovery. As noted by Meehan et al., in a recent review of medical therapies for concussion, the evidence for the proposed pharmacologic therapies is equivocal, conflicting, and/or based on limited studies.[13] The reviewers recommended that providers with experience in the management of concussion prescribe pharmacologic treatment only for symptoms that persist past the typical recovery period and are debilitating to a degree that the potential benefits of the treatment outweigh the risks. In addition, the consensus statement guidelines recommend that return to play should not commence while patients are taking medications (e.g. NSAIDs) that may mask or modify the symptoms of concussion.[1]

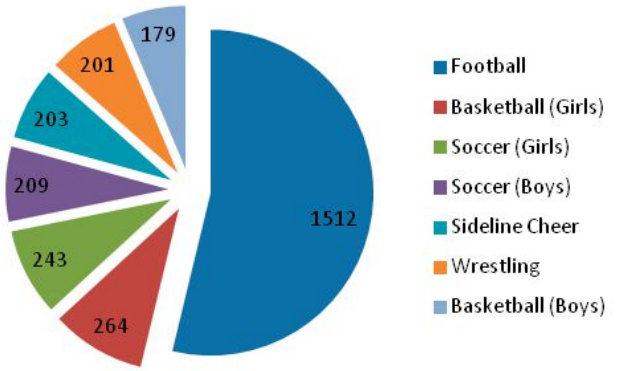
Headache is the most common initial symptom from concussion[14] but is also relatively common following participation in sports in the absence of head injury and in the general population. Non-steroidal anti-inflammatory drugs (NSAIDs) are commonly prescribed for concussion-associated headache but evidence for their use is lacking and medication overuse is a concern.[3] It is not well known how to best treat severe/refractory headache due to concussion in adolescents presenting to the emergency department.

Sleep disturbance is a common symptom reported at follow-up visits for concussion.[14] It is important to address sleep hygiene at the initial visit, particularly removal of distractions from the bedroom and avoidance of excessive daytime napping, caffeine, nicotine and alcohol.[13] Melatonin and trazodone have been used to treat persistent sleep disturbance related to concussion, but initial management always should start with emphasizing proper sleep hygiene, sleep schedules, and environment.[13]

Patient Education and Disposition Decisions

It is important to provide appropriate instruction to patients and families about sports-related concussion including appropriate cognitive rest, physical rest, expected clinical course, prognosis and follow-up. SRC symptoms often resolve within a 7-10 day period but recovery on average takes longer in adolescents compared with adults.[15] In addition, a significant percentage of adolescents will have symptoms that last beyond 10 days, sometimes even for months.[16] It is difficult to determine when those symptoms are specifically related to the concussion versus confounding factors. Based on expert opinion, patients with prolonged

Figure 2
Number of brain injuries reported to the Missouri State High School Activities Association, 2013-145



symptoms after a concussion may benefit from consultation with someone who has experience in managing concussion, such as a sports-medicine physician, neurologist, neuropsychologist and/or neurosurgeon depending on your community's resources.[1]

Physical rest with appropriately delayed return to play is the cornerstone of acute management of sports-related concussion. Children who are diagnosed with SRC in the acute care setting should be removed from organized sports and strenuous aerobic and resistance exercise until symptoms have resolved and clearance is given by their healthcare provider, even if their evaluation is reassuring and their symptoms are improving at the time of their acute care visit[1]. Based on observational data and expert opinion, the consensus statement guidelines recommend a stepwise return to play once symptoms have completely returned to baseline. Steps 2-6, listed in Table 2 below, take a minimum of 24 hours for each step, and if an athlete develops symptoms at one level they return to the previous level where they were symptom free. Low-level exercise, beneath a symptom threshold, may be helpful for those who are slow to recover.[1] Although the time required until return to play is highly variable, Echlin et al.,[17] found that the mean duration until return to play was 12.8 days in a study of ice hockey players (age 16-21) when using physician evaluation and the consensus statement guidelines. According to the 2013-14 Interscholastic Youth Sports Brain Injury Report from the Missouri State High School Activities Association, male athletes were held out an average of 11.5 days per incident and females were held out 11.6 days[5]

Cognitive rest (or "Brain Rest") is also considered a cornerstone of current acute management of concussion but there are unresolved questions about its benefit, appropriate duration and necessary elements.[1] The evidence that cognitive rest is beneficial comes from observational and retrospective studies. For instance, in a study of 335 patients aged eight to twenty-three who presented to a sports concussion clinic within three weeks of injury and reported their average level of cognitive activity, there was an association between increased cognitive activity and prolonged duration of symptoms.[18] However, further study would be useful to determine the appropriate amounts and duration of cognitive rest. For example, in a retrospective study of student-athletes seen in a university-based sports concussion clinic, those who had engaged in moderate levels of cognitive activity had better symptom and neurocognitive outcomes than those who had engaged in the highest and lowest levels of activity[19]. Nevertheless, a 48-72 hour period of rest is commonly recommended and patients are typically advised to initially avoid activities requiring intense concentration such as video games, school work and screen time.

It is difficult to predict which patients are at higher risk of persistent or severe ongoing symptoms. In a recent systematic review, older age, loss of consciousness, headache, and nausea or vomiting at initial presentation were associated with increased risk of persistent concussion symptoms.[20] However, the studies were too heterogeneous to allow a meta-analysis, the evidence was limited and results were often contradictory.

There are multiple case reports where repeat head injury occurs during the so-called "vulnerability period," when someone is still symptomatic after a SRC. These reports describe injuries that result in high morbidity and mortality, and have been termed "second impact syndrome." However, there is debate among experts regarding the defining characteristics of second impact syndrome. What evidence from a recent study of almost three-thousand NCAA football players does show is that that athletes with one concussion are at increased risk for repeat concussions.[21] However, there is conflicting evidence whether these athletes with recurrent concussions are at increased risk for more prolonged or severe concussion symptoms with repeat concussions.[22,23]

Prevention of Sports-Related Concussion

Prevention of sports-related concussion is particularly important since the ability to treat SRC or reduce its effects is limited. There is broad agreement that players, parents, coaches, trainers, and health care providers should be educated on the risk factors, symptoms, signs and potential complications of concussion. Various methods provide this opportunity such as pre-participation physicals, web-based resources and outreach programs.[1] Although

there is evidence that protective equipment reduces the risk of more severe head injuries in certain sports such as rugby[24] and skiing,[25] there is very limited evidence that currently available protective equipment prevents against SRC. Additionally, the use of headgear in soccer, women's lacrosse, and other sports may result in behavioral changes termed risk compensation, where athletes actually take higher risks based on a false sense of security from headgear. Finally, various rule changes in many sports have been proposed related to SRC without widespread agreement, but there is a general consensus for rules that allow time for effective off-field medical assessment, reducing head impacts during practice, and enforcement of established rules to prevent unnecessary contact.[1]

Conclusions

Caring for the increasing number of adolescents who present for acute care visits due to sports-related concussion is challenging but can be made more rewarding by following a few key concepts. Optimal management starts with a thorough evaluation aimed at accurate diagnosis of concussion and exclusion of co-morbid injuries and life-threatening conditions. Imaging and laboratory workup is not routinely needed to evaluate concussion. Adolescents and families need to be educated regarding cognitive and physical rest, expected clinical course, prognosis, and delayed return to play. Lastly, adolescents should not be cleared for return to play from the acute care setting; instead return to play should be delayed until symptoms have improved and appropriate follow up has occurred. There are many opportunities for further research relevant to SRC in the acute care setting such as: predicting which adolescents are at increased risk for more prolonged or severe symptoms, determining the optimum elements and duration of cognitive rest, identifying acute care treatments for headache and other symptoms, and developing interventions in the acute care setting that reduce the rate of repeat injury.

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Disclosure

None Reported.

MM

Posterior Circulation Ischemic Stroke

by Steven Go, MD

The emergency physician needs to have a high level of suspicion for posterior circulation stroke, recognize the salient risk factors and clinical signs/symptoms, and be fastidious with the history and neurological exam.



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Abstract

Approximately 20-25% of all acute strokes occur in the posterior circulation. These strokes can be rather difficult to diagnose because they present in such diverse ways, and can easily be mistaken for more benign entities. A fastidious history, physical exam, high clinical suspicion, and appropriate use of imaging are essential for the emergency physician to properly diagnose and treat these patients. Expert stroke neurologist consultation should be utilized liberally.

Introduction and Epidemiology

In the United States, approximately 800,000 people suffer a stroke every year.[1] Although the majority suffers an ischemic stroke in the regions of the brain supplied by the anterior circulation (AC), approximately 20-25% of ischemic strokes occur in the territory of the posterior circulation (PC).[2] Mortality in posterior circulation stroke (PCS) (about 3.6% to 18.6%, depending on the stroke registry surveyed[3]) is classically thought to usually be more favorable in anterior circulation stroke (ACS), although that notion has been challenged in the literature.[4] However, what makes PCS such a vexing entity for clinicians is the myriad of ways it can present, ranging from the obvious to the mundane, and is probably more common than generally appreciated. For example, the frequent symptom of vertigo has been estimated to have a cerebrovascular origin 3-7% of the time.[5] In addition, PCS can rapidly progress to a dire condition, despite a sometimes very non-specific first presentation. Therefore, it behooves the emergency physician to be familiar with which patients are at risk for PCS, how to recognize the various symptom complexes, and how to treat these patients in an expeditious fashion. For the purposes of this article, the discussion will be confined to ischemic PCS.

Anatomy and Pathophysiology

The posterior circulation of the brain is pictured in Figure 1. The major arteries of the posterior circulation are the vertebral, posterior inferior cerebellar, basilar, and the posterior cerebral arteries. The posterior circulation is generally thought of as split in three divisions: proximal, middle, and distal. The most common areas of the posterior circulation affected in ischemic stroke are: distal (41%) multiple territories

(25%), proximal (18%) and middle (16%).[6] The major areas of the brain supplied include the brainstem, cerebellum, thalamus, occipital visual cortex, medial temporal lobe, and auditory/vestibular structures. The diversity of function of these structures helps explain how posterior circulation deficits can present in many different ways.

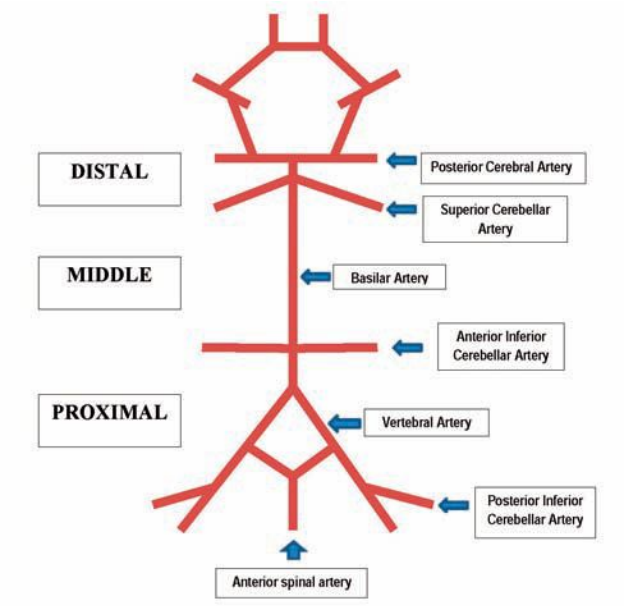
Clinical Presentation

According to a 2012 analysis of the New England Medical Center Posterior Circulation Registry (n = 207)), the most common presenting symptoms of PCS are dizziness (47%), unilateral limb weakness (41%), dysarthria (31%), headache (28%), nausea or vomiting (27%) and blurry vision (20%).[6] The most common clinical signs are unilateral limb weakness (38%), gait ataxia (31%), unilateral limb ataxia (30%), dysarthria (28%), nystagmus (24%), and Babinski's sign (24%).[6]

The vast majority of patients typically have more than one symptom or sign. Since the posterior circulation supplies the brain stem, classic dogma has claimed that the sine qua non of PCS is the presence of "crossed deficits" (ipsilateral cranial nerve deficits coupled with contralateral extremity deficits. These deficits may be either motor or sensory). However, in reality, the presence of crossed deficits is not sensitive, occurring in only 3%-4% of PCS.[7] Other specific, but non-sensitive, signs/symptoms with a high positive predictive value (PPV) are nystagmus (83.7% PPV), Horner's syndrome (100%), oculomotor nerve palsy (100%), and quadrantanopia [defective vision in a quarter of the visual field] (100%).[7] Interestingly, contrary to conventional teaching, disturbed consciousness was not found to be very sensitive (10.3%) or specific (81.4%) for PCS.[7] As shown by these data, although some clinical features make the presence of a neurological emergency obvious, most often, the signs/symptoms of PCS are rather non-specific. Some experts feel that the key to diagnosis is looking for the focality of symptoms that localize to the regions supplied by the posterior circulation; however, clinical features that allow easy discrimination of PCS from more benign entities remain elusive.[8]

Three classic syndromes involving the posterior circulation are worth noting. Basilar artery occlusion affects the middle portion of the circulation and is characterized by unilateral limb weakness, dizziness, dysarthria, diplopia, headache, cranial nerve VII findings, Babinski's sign, and oculomotor findings.[6] When the ventral pons is involved, basilar artery occlusion can also cause "locked in" syndrome in which the patient is fully conscious, yet completely paralyzed, except for blinking and sometimes facial movements.[6] A second syndrome, lateral medullary infarction (Wallenberg's syndrome) is caused by occlusion of the posterior inferior cerebellar artery or the vertebral artery. The classic findings are the crossed findings of decreased pain and temperature on the ipsilateral face and the contralateral side of the trunk and limbs. Additional findings include severe vertigo, unilateral arm weakness, dysphagia, dysarthria, dysphonia, nystagmus (horizontal and rotary), and ataxia. Respiratory function and cardiovascular abnormalities can also occur. Finally, vertebral basilar syndrome is caused by a disruption of the proximal posterior circulation. It is sometimes known as "beauty parlor syndrome" since it is associated with head turning and resultant occlusion of the vertebral artery. It presents with dizziness, nausea and vomiting, unilateral limb weakness and/or ataxia, cranial nerve V findings, nystagmus, and gait ataxia.[6] Despite these general patterns it should be noted that it is rare that the above syndromes present in their purely classic forms.

Figure 1
Major Arteries and Divisions of the Posterior Circulation



History

A rapid, focused history should be taken, including a chronological retelling of the patient's symptoms. Special attention should be paid to the presence of the most common symptoms listed above. A history of head or neck trauma should be ruled out, including cervical manipulation as this has been historically linked to PCS via

cervical arterial dissections.[9] Stroke risk factors[1] should be assessed and documented including advancing age, gender (female > male), ethnicity (African Americans > whites), hypertension, diabetes mellitus, previous TIA/stroke, atrial fibrillation, dyslipidemia, smoking, vascular disease (including coronary heart disease), CHF, smoking, physical inactivity, soda drinking,[10] family history, and chronic kidney disease (Cr ≥ 1.5 mg/dL), [11] and sleep apnea. Stroke risk factors of particular relevance to women include: use of estrogen, migraine with aura, pregnancy and preeclampsia.[1] The possibility of PCS should not be dismissed out of hand on the basis of young age, as cervical artery dissections occur in this group.[12] As with any potential stroke patient, it is imperative to ascertain the exact time the patient's symptoms began, as this has implications in terms of treatments that may be available to that particular patient. During the initial history, the National Institute of Neurological Disorders and Stroke (NINDS) indications and contraindications for systemic thrombolytic therapy should be documented.[13]

If the patient presents with "dizziness", this common symptom must be explored very carefully, as the history may have subtle clues to a need to suspect PCS. First, true vertigo (spinning, whirling, or tilting sensation) must be separated from lightheadedness. Second, the presence of "red flag" associated history or symptoms should be asked about. For example, h/o head or neck trauma (including cervical manipulation), head and/or neck pain, focal neurological symptoms (including cranial nerve findings, focal weakness, and speech difficulties), and visual complaints.

It is also important to realize that symptoms can be transient in the case of a posterior circulation TIA, which makes the diagnosis even more challenging.

Physical Exam

Once PCS is suspected on the basis of the history, a focused exam must be done. Airway should be assessed if altered mental status is present. The head and neck should be examined for trauma. HEENT exam should be done, focused on the ocular exam and carefully inspecting for nystagmus (particularly non-horizontal or gaze-evoked [nystagmus that changes direction as the direction of the gaze shifts]), and visual disturbances, including visual field cuts. Cranial nerves should be examined carefully, as multiple deficits indicate a central process. Cardiac exam for irregularly heartbeat and murmurs should be done. If the patient presents with vertigo, a Dix-Hallpike maneuver may be useful to detect a peripheral lesion, but this exam should not be done if neck trauma is present or if a cervical artery dissection is suspected because they involve rapid rotation of the head. Further specialized neurological tests may help differentiate between peripheral vertigo and stroke.

HINTS testing consists of the Head Impulse test (evaluation of the vestibular-ocular reflex), examination to detect the presence of Nystagmus that changes direction with gaze direction, and Test of Skew (vertical ocular misalignment during the cover-uncover eye test). The presence of one or more findings consistent with central vertigo has been reported to be sensitive and specific for stroke in expert hands; however, multicenter, external validation of HINTS testing with untrained physicians has not yet been published.[14] Finally, the National Institutes of Health Stroke Scale (NIHSS) should be used to perform a rapid (five minutes or less), yet thorough, neurological exam. The NIHSS is readily available on-line in pdf form,[15] and on-line score calculators exist as well.[16] Bedside NIHSS calculators are also available in smartphone apps for various platforms.[17-18] If safe, gait should be assessed and the severity of disturbance (if any) noted. Although use of the NIHSS remains standard of care in the US, it is very important to realize that it is heavily weighted towards anterior circulation findings. That is, a patient can have a clinically significant PCS, and score relatively low on the NIHSS. For example, a motivational speaker may present with isolated aphasia and only have an NIHSS score of 1; yet, for this patient, this deficit is clinically important. Nevertheless, the use of the NIHSS is indicated in all patients suspected of having a stroke.

Differential Diagnosis

A listing of selected conditions that can mimic a PCS can be found in Table 1.[2,19]

Table 1
Conditions that can Mimic a Posterior Circulation Stroke

- Benigh Postitional Vertigo
- Brain Tumor
- Conversion Disorder
- Hypoglycemia
- Intracranial Hemorrhage
- Meniere Disease
- Multiple Sclerosis
- Neuro-Bechet's Disease
- Posterior Reversible Encephalopathy Syndrome
- Sarcoidosis
- Seizure
- Sepsis
- Vestibular Migraine
- Vestibular Neuronitis
- West Nile Encephalopathy

Initial stabilization

As always, airway, breathing, and circulation need to be assessed and stabilized first. Intravenous access should be obtained and cardiac monitor should be applied to detect dysrhythmia. Oxygen should be given if O_2 Saturation on room air is < 95%. Once the patient is stable, a rapid history and physical exam are completed as above. A bedside glucose determination should be done to r/o hypoglycemia as a stroke mimic. This is the only laboratory test whose results must be known prior to imaging. At this point, the priority is to image the patient as quickly as feasible as that will direct any further therapy. There are currently no validated, evidence-based decision rules on whom to image to rule out posterior stroke. Therefore, if PCS is strongly suspected on the basis of the bedside history and exam, radiological imaging is warranted.

Imaging

The first study typically done in these patients is a non-contrasted head computed tomography (CT) to rule out an intracranial stroke mimic, and as a prerequisite to thrombolytic therapy. If PCS is suspected, it is imperative that this study be accomplished within 25 minutes of presentation to the ED, and the study interpreted by an expert radiologist (preferably a neuroradiologist) within 45 minutes of presentation.[13] Although current generation CT is very sensitive to hemorrhage, it is expected that it will be negative in acute ischemic stroke, including PCS. Magnetic resonance imaging (MRI) is more sensitive than computer tomography (CT) for PCS;[20] however lack of availability, cost, and patient tolerance are barriers to ED use. Therefore, if PCS is strongly suspected, vascular imaging of the posterior circulation is appropriate. Typically, this is done as a CT angiogram (CTA) of the head and neck. If available, MR angiogram (MRA) can be done in place of CTA to visualize the cervical and cerebral vasculature. There is a paucity of published data on comparative sensitivity rates between CTA and MRA. However, in one series, the sensitivity of CT Angiogram and MR Angiogram for vertebral artery stenosis ≥ 50% were both good to excellent, up to 68% and 89%, respectively.[21] In another series, CT/CTA was subjectively favored over MR/MRA for vertebral dissection.[22] The other utility of these vascular studies is that they also provide anatomic information with regards to the degree of blockage of the carotid arteries and their branches as well as detecting arterial dissections, which may have implications for further treatment decisions in these patients. In some centers, a non-contrasted head CT is included in the CTA order and the studies may be ordered concurrently. In this circumstance, it is our practice to go with the patient to the CT scanner and review the head CT in real time. If the head CT demonstrates an alternative cause for the patient's symptoms, then the CTA is canceled.

Treatment

Like any other acute stroke, systemic thrombolytic therapy should be considered in a patient with acute PCS.[23] It is beyond the scope of this article to discuss thrombolytic therapy for stroke in detail; however, a few salient points should be kept in mind. Thrombolytic therapy should be given according to the inclusion/exclusion criteria as defined in the literature, including the appropriate time windows. The previously mentioned anterior circulation bias of the NIHSS should be considered when the NIHSS is calculated, and thrombolysis should still be considered even when the NIHSS score is low if the PCS symptoms are clinically significant. PCS patients with a contraindication to systemic thrombolysis may still be candidates for endovascular therapy, such as intra-arterial thrombolysis or mechanical thrombectomy.

Patients with stroke secondary to cervical artery dissection are usually treated with anticoagulation or antiplatelet therapy. However, the optimal treatment strategy is yet to be determined, as recent data regarding the efficacy of systemic thrombolysis and endovascular therapies have been reported.

Because the stroke treatment literature evolves rapidly, treatment decisions can sometimes be difficult. Therefore, liberal consultation with an experienced neurologist with stroke expertise can be enormously helpful both in diagnostic strategies and treatment decisions. In the absence of an onsite consultation, a teleneurologist can suffice.

Disposition and Follow Up

All PCS patients should be admitted to a facility that has expertise in stroke care, preferably to a primary or comprehensive stroke center so that the patient can be managed in a dedicated stroke unit. If the facility

that the patient initially presents to does not have these capabilities, the patient should be transferred to the nearest, most appropriate stroke center from the ED once they are stable for transport. If the patient is to be transferred, consultation with the accepting neurologist should be obtained prior to the administration of thrombolytics in most cases, as the best treatment modality for individual patients, their particular lesions, and their particular clinical presentations may vary.

If symptoms are transient and consistent with TIA, risk stratification scores such as the ABCD^2 score[24] can be used; however, authors have recently questioned the utility of this scale in posterior strokes.[25] Therefore, it may be prudent to admit these patients as well. As with diagnostic and treatment decisions, consultation with a neurologist can be very helpful with difficult disposition decisions.

Conclusion

PCS is an important, but difficult diagnosis to make, given its wide range of presentations. The emergency physician needs to have a high level of suspicion for PCS, recognize the salient risk factors and clinical signs/symptoms, and be fastidious with the history and neurological exam. Finally, they should make frequent and liberal use of stroke neurologists and stroke centers in caring for these challenging patients.

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Disclosure

None reported. **MM**

Transitions in Care: When Words Can Save Lives

by Christine Sullivan, MD, P. Charles Inboriboon, MD & Shelley Bridgford, MD

Physicians must embrace hand-over communication as one of the most critical aspects of patient care before any substantial improvement in this process can occur.



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Abstract

Among the myriad of skills required of emergency medicine (EM) physicians, communicating concise and effective transitions in care is one of the most critical for patient safety. EM physicians transition care daily, both within their own department and among other specialties. We will discuss the crucial link between care transitions and patient safety, the processes and challenges in the hand-over exchange, and recommend an approach to improve your current system with transitions in care.

Background

Patient safety and quality care are imperative to the practice of medicine. Transitions in care (hand-over) is an important component of a physician's practice as patients often have multiple health care providers participating in their care.[1] In fact, The Joint Commission (TJC) has identified communication breakdowns during handoffs as the single greatest patient safety threat.[2] Hand-over communication is a daily part of emergency medicine (EM) practice. EM physicians may transition the care of patients that will remain in the emergency department (ED) after their shift to an on-coming EM physician who is now responsible for finalizing patient disposition decisions; for example, after an observation period or when the results of diagnostic testing is complete. Additionally, for the EM physician, hand-over includes communicating a concise patient summary to non-EM physicians who will be assuming the responsibility of the patient during an admission, consultation, transfer, or in follow-up care.

Underscoring the importance of handoff communication, the Accreditation Council for Graduate Medical Education (ACGME) mandates that all specialty residency programs ensure that their residents are competent in this skill.[3] Recently, specialty specific milestones to measure key achievements of residents during their training have been implemented by the ACGME in collaboration with the American Board of Medical Specialties (ABMS) and other specialty organizations.[4] The ability to transition patient care in an accurate and efficient manner is defined as one of the skills in the Team Management Milestone for EM.[5] For the practicing EM physician, The Model of Clinical Practice for EM describes skills to admit, discharge, transfer, and collaborate with

physicians and other healthcare team members as requisite for board certified emergency physicians.[6]

The focus of this article will be on transitions in care in the ED; however, we feel it is applicable to most medical specialties. To frame our discussion, we will first review why transitions in care are a critical safety issue and discuss some of the specialty specific challenges in this process for EM. We will examine how system and communication issues within the specialty and practice of EM can impact and serve as obstacles to this key patient care process. And finally, we will present a quality improvement approach to examine your department's current transition in care practices and recommend areas to review to ensure quality care and patient safety.

Hand-overs and Patient Safety

When reviewing the causes of reported sentinel events to TJC, errors in communication and continuum of care (which include patient continuity and transfers) were among those most frequently cited. Underscoring TJC's concern that transition errors are a patient safety threat, data demonstrated that communication errors were the third most common cause of reported sentinel hospital events in 2011 and 2012, rising to the second most frequent cause in 2013.[7] Moreover, 80% of serious medical errors are caused by ineffective transitions in care.[8] Delays in or inappropriate patient treatment, increased length of hospitalization, more frequent readmissions, and an increased patient care cost have been attributed to poor hand-overs.[9] Perhaps most concerning to EM physicians is that up to 24% of ED malpractice claims implicate poor patient handoffs as a factor.[10] Despite hand-over communication being critical to patient safety, it is alarming to realize that only 8% of United States medical schools provide formal training in this essential skill.[11] Furthermore, physician experience alone does not seem to significantly improve the effectiveness of transitions in care.[12]

So, why is the ED recognized as a high-risk area for adverse events,[13] and why are transitions in care critical for emergency medicine physicians? The scope of practice for EM provides unique challenges to the transition in care process. EM physicians are shift workers that do not know the volume, complexity, and acuity of the patients that will present to the ED on any given day. EM physicians usually don't know their patients. Task switching to efficiently and effectively manage multiple patients frequently fragments and interrupts patient care, as we need to direct our attention to the most critically ill patients first. Patient care in the ED is a continuum that is often still evolving at the end of the shift. Anticipated and actual patient disposition and follow up plans rely on reassessment after a period of observation, treatment, and analyzing diagnostic findings. Therefore, what is expected to happen and what is the final conclusion of the ED visit for a patient is often not known when the hand-over of care and responsibility for the patient occurs.

Identifying High Risk Transitions in Care

The ED environment and workflow can be an obstacle to this key patient care process. As previously discussed, we rarely know our patients and are forced to make decisions with limited information. Given these constraints, EM physicians are at risk for cognitive bias errors. We often fail to ask if the handoff originator "got it wrong?" However, there are several red flag scenarios that are high-risk transitions in care that have been previously identified in the EM literature.[14]

Patients with unclear diagnoses are susceptible to error at the time of hand-overs.[14] We are often prone to diagnosis momentum when given a diagnosis.[14,15] For instance, if an oncoming EM physician is told that a patient has a flare of chronic pancreatitis despite normal labs, he may fail to consider other possibilities such as perforated ulcer if the patient worsens. Risk can be reduced by identifying uncertain diagnoses during transitions in care, this provides the opportunity for "fresh eyes" to review the case.[14,15] Similarly, patient hand-overs involving deviations from a typical diagnosis or treatment plan are high-risk.[14]

Even when the diagnosis is clear, patients with unclear dispositions require additional attention.[14] For example, consider an intoxicated patient who is to remain in the ED for observation after the initial EM physician's shift is complete. How is it decided if the patient is progressing as expected or when further diagnostic evaluation is indicated? A more in-depth discussion may need to occur during the hand-over of these cases and it may be useful to evaluate the patient at the bedside with the outgoing EM physician before completing the handoff process.[16]

Another care transition that requires special consideration is when disposition decisions are based solely on imaging studies.[14] What is the oncoming physician to do if there is an incidental finding or an unexpected finding, such as a computerized axial tomography (CAT) scan done to evaluate a patient for appendicitis that demonstrates colitis? Can this patient be safely discharged or do they need to be admitted? If the patient has a history and exam highly suggestive of appendicitis and the imaging scan is negative, what is the next course of action?

The same inherent problem holds true for consultant-driven disposition plans.[14] When we allow disposition and treatment plans to be determined by consultants we risk premature closure. Anticipatory guidance can be used to mitigate risk in the case of imaging based dispositions,

consult based dispositions, and diagnosis and treatment plans that deviate from normal practice.[14]

Patients that require additional caution include unstable patients, those with psychiatric illness, and those with prolonged stays in the ED.[14] The unstable patient's clinical condition can rapidly deteriorate; it may be beneficial to physically evaluate these patients with the handoff originator during the transition process.[16] Psychiatric patients, including persons with substance abuse problems, are high risk because of communication difficulties associated with disease or intoxication. We are at risk for cognitive bias, subjective inferences about patients or scenarios affecting our judgment or the reality of the situation. This includes both our preconceptions about patients such as high ED utilizers and biases that are introduced when patient cases are discussed during hand-overs.[15] Side effects from psychiatric medications or mental illness may confound the expression of symptoms and physical findings. For patients that remain in the ED for an extended period of time and are transitioned to multiple providers, an increase in omission errors may result.[12]

We believe that transitions in care of non-English speaking patients and those that are elderly or very young should receive additional scrutiny. For patients that are non-English speakers, both the patient and the provider must rely on the interpreter's ability to accurately convey information between the two parties. The patient-physician relationship may be compromised when a "third party" is involved. Also, the perceived increased time associated with using an interpreter may dissuade the oncoming provider from re-evaluating these patients. Patients at the extremes of age are at risk as they may have atypical presentations of emergent complaints. Younger patients may not be able to accurately communicate their complaints and physicians must trust their caregivers to provide history. Likewise, older patients with cognitive, receptive, or expressive communication barriers may also find it difficult to communicate. In addition, multiple medications may mask or confound physical exam findings in the elderly and the physician assuming care of these patients must take care to ensure that inadvertent drug-drug interactions don't result when medications are provided.

Table 1
Transition in Care Templates

SBAR
S - Situation
B - Background
A - Assessment
R - Recommendation

SHOUT
S - Sick or not sick
H- History and Hospital Course
O - Objective Date
U - Upcoming Plan, Disposition
T - To Do, Time for Questions

IPASS
I - Illness Severity
P - Patient Summary
A - Action List
S - Situation Awareness and Contingency Planning
S - Synthesis by Receiver

SIGNOUT
S - Sick or DNR
I - Identifying data
G - General hospital course
N - New events of day
O - Overall health status
U - Upcoming possibilities with plan
T - Tasks to complete overnight with plan rationale
? - Any questions

Barriers to Effective Communication

Sub-optimal communication is the most commonly linked cause of poor patient outcomes during transitions in care.[12, 17] One aspect of this transition of care process that is unique to EM physicians is the diversity that this communication may require. The information that is communicated about a patient between EM physicians may be very different than the conversation between an EM physician and a surgeon or primary care physician assuming care for the patient. As a result, EM physician needs to develop flexible communication practices as the situation warrants.

Without a physical space devoted to the hand-over process, EM physician to EM physician transitions in care occur in the midst of numerous distractions. Both providers may be distracted by various needs of the department, interruptions by other staff, and by the ambient noise of the ED.[14] In addition to these distractions, the lack of a physical space with access to a tracking board could lead to omitting a patient during this process.[18] Electronic health record access during care transitions is important to adequately review up-to-date critical information.[12, 19]

It is important to balance the amount of information exchanged about each patient during the transition process. Too little information may make it difficult to effectively carryout patient care plans; extraneous information may distract from the essential aspects of the case. Templates such as SBAR, I-PASS, SHOUT, and, SIGNOUT have been developed to standardize the hand-over process and are provided in Table 1.[20-24] However, these tools have never been validated.[15,20] They should be thought of as a minimal data requirement for the hand-over of patients.[15,16, 25] It is important to note that patients at high-risk for hand-over related errors should be openly discussed and anticipatory guidelines should be developed.[16, 18]

Table 2. Recommendations to Improve Transition in Care Practices

Recommendation	Rationale
Review current practices	May allow identification of specific issues that should be changed or implemented -EM-to-EM process -EM-to-other specialty physician
Identify key information that should be included	Information may be different depending on the recipient and the patient's condition
Identify specifically when responsibility for the patient changes	Clarifies expectations for patient care
Provide time at shift transitions devoted to transitions in care	Acceptance of process as important and not rushed, provide opportunity of provider who is assuming responsibility to summarize and clarify questions
Method of Communication	Electronic health record can identify the timing of change in responsibility and record exchanged information
Consider using a template as a guide	Ensures that crucial information will not be excluded if process is done the same way every time
Provider adaptability	Understanding that process is fluid based on current ED situation
Review problematic hand-overs	Allows for recognizing system issues and provider education issues

Even after the hand-over process is completed it may be unclear who is responsible for the patient. Does responsibility for the patient occur when the outgoing provider completes his verbal hand-over or is it when the outgoing clinician physically leaves the ED? This lack of clarity can be confusing for both ED staff and patients.

EM physician to admitting or consulting physicians hand-overs are fraught with communication barriers as well. There is rarely devoted space or time for this EM to non-EM physician exchange to occur. Rather, this process most often occurs while directly engaged in the care of other ED patients. We often page a consultant or admitting physician and do not have time to wait by the phone for a response. Because of this, EM physicians may be distracted and may not have access to the electronic health record when the hand-over occurs. Since most hand-overs occur over the phone, "read back" practices (such as in the aviation industry) and time for questioning may be helpful methods to address the non-face-to-face information exchange.[19] In addition, consultants and admitting physicians often have different expectations from the EM physician of what information should be relayed in a hand-over and when care should be transitioned. [2]

In the case of admitted patients who remain in the ED, it may not be clear who is responsible for the care of the patient. When does responsibility transition, is it when the hand-over is completed, when orders are placed, or when the patient leaves the department? Likewise, when consultants present to the ED to see a patient, responsibility for patient care may be unclear for both the patient and the healthcare team. Is the orthopedist responsible for the management of the fracture or is it the EM physician? Many of these ambiguities can be addressed by engaging all key stakeholders involved in the patient's care.[2] A multidisciplinary approach to hand-over can benefit patients by improving interdepartmental relations, ensuring transfer of essential information, and providing seamless transition of responsibility during patient care.

Improving Current Transition in Care Practices

Recommendations to improve ED hand-overs supplement proposals put forth by the American College of Emergency Physicians Transition in Care Task Force.[15] To improve care transition practices, an objective analysis of current end-of-shift processes between EM physicians as well as discussions with consulting, admitting, and transferring physicians should occur. For non-EM physicians, recommendations about the type of patient care information needed during transition exchanges would be beneficial. As time can be a constraint for both the giving and receiving physician, providing all the necessary information while omitting needless discussion can assist both parties. Understanding of "special circumstances" that need to be relayed at the time of the care transition, such as a patient's psychosocial situation should be included.

Scrutiny as to whether the ED's current transition process allows adequate time for the sharing of critical information should be examined. Off-going physicians may be motivated to rush as they may have tasks to complete before they leave and other obligations to attend to. On-coming physicians may already have patients to evaluate and may be reluctant to assume care of patients that they did not initially evaluate. Formalizing the hand-over process can help facilitate acceptance of this crucial point in patient care and ensure that both physicians understand

the care plan. Understanding that patient care priorities may necessitate the interruption of the hand-over process, but that it nevertheless needs appropriate attention when circumstances stabilize, is key to ensuring that transitions provide patients with safe, on-going quality care.

When reviewing current hand-over systems in your ED, consider how the electronic health record can facilitate this process. Can a transition record help clarify when role and responsibility for patient care has occurred between physicians? Additionally, implementation of a systematic process for all care transitions may negate the loss of critical information during this process. However, physicians must realize that hand-over templates may not capture all the nuances of the individual patient. To truly support a performance improvement approach, continuous review of hand-over processes should be implemented. As a result of performance review, implementation of system changes and enhanced education can improve the culture of safety for our patients. Table 2 summarizes recommendations for an approach to review and implement processes to improve your current transition in care practices.

Conclusion

Physicians must embrace hand-over communication as one of the most critical aspects of patient care before any substantial improvement in this process can occur. EM physicians should understand that the environment and practice that makes our specialty unique also increase the likelihood for patient care errors. Examination of system and communication issues may identify processes that can be improved upon to enhance patient care transition safety.

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Disclosure

None reported.

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Ultrasound for the Evaluation of Skin and Soft Tissue Infections

by Kevin O'Rourke, MD, Nicole Kibbee, MD & Amy Stubbs, MD

Ultrasound has been shown in multiple studies to be useful in the diagnosis and treatment of skin and soft tissue infections. In some instances, management may be changed, ultimately benefitting patients.



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Abstract

Skin and soft tissue infections, including abscesses and cellulitides, are common problems seen by physicians. The treatment of soft tissue infections varies depending on the depth of infection or the presence of a fluid collection requiring incision and drainage. Ultrasound is a valuable tool in the evaluation of skin and soft tissue infections, enhancing our ability to diagnose an abscess cavity or deeper infection and has been shown to be more reliable than clinical exam alone. The judicious use of ultrasound allows for more appropriate patient care and management of their underlying infection. It can prevent an unnecessary procedure or identify occult abscesses that may go on to develop a more severe infection requiring hospitalization. In this article,we discuss the utility of ultrasound as a diagnostic tool for skin and soft tissue infections, techniques to optimize scanning, and the potential drawbacks of its use.

Introduction

Skin and soft tissue infections (SSTIs) such as abscess, wound infection, and cellulitis are encountered frequently in the emergency department (ED) and primary care setting. Greater than three million ED visits per year in the US are due to SSTIs, accounting for approximately three percent of all ED visits.[1] Staphylococcus aureus and Streptococcus species are thought to cause the majority of these infections, though various other pathogens are occasionally cultured. The vast majority of SSTIs with purulence are caused by *S. aureus*. Community acquired methicillin-resistant *S. aureus* (CA-MRSA) has become the dominant strain in many locations.[2] Though the causes of cellulitis are often more difficult to elucidate due to lack of culture evidence, *S. aureus* and *B-hemolytic streptococci* are thought to be the culprit pathogen in the majority of cellulitis cases, as well.

The majority of SSTIs can be managed on an outpatient basis with treatments such as aspiration, suture removal (for infected wounds), or incision and drainage (I & D) in the case of SSTI with fluid collection, with or without oral antibiotics. Current recommendations for uncomplicated

abscess are for I & D only, with empiric antibiotics to cover for CA-MRSA only in cases with complicating factors such as signs of systemic illness or immunocompromise. For full current SSTI management recommendations please see the Infectious Diseases Society of America's 2014 guidelines on this topic.[3] Determining the presence of a drainable fluid collection at the site of an apparent SSTI is important to clarify the appropriate treatment, as many SSTIs with fluid collections may be cured with a simple I & D. Occasionally patients will also require hospitalization for more advanced surgical procedures and/or intravenous antibiotics. Ascertaining the presence of a drainable fluid collection or deeper infection is essential to initiate the appropriate treatment from the onset and may help prevent unnecessary return visits, hospitalization, and morbidity and mortality.

There is a growing body of evidence that ultrasound (US) increases diagnostic accuracy in SSTIs and can influence treatment decisions.[4] Using US the physician can demonstrate the presence of fluid collections, edema, or soft tissue stranding indicating inflammation. Signs of a deeper infection, such as peri-fascial fluid and subcutaneous emphysema may also be apparent via US imaging.[5] One prospective ED study showed that US changed management in approximately fifty percent of adult patients clinically thought to have cellulitis, either by identifying an occult abscess or confirming the lack of one and eliminating the need for I & D.[6] Other studies have shown that US is more sensitive than physical exam alone in the diagnosis of SSTIs in pediatric populations.[7,8] US may be especially helpful in cases of cellulitis with large areas of induration in which the presence of an abscess cannot be ruled out through physical exam alone or in cases of failed treatment where an occult abscess may be the culprit.[9] Ascertaining the presence of any of the above can be invaluable to the treating physician in initiating the appropriate therapy.

US is fast, cost-effective, portable, readily available in many practice settings, and does not expose patients to ionizing radiation. Studies also indicate that US for soft tissue is an easily learned skill and that ED physicians can accurately interpret them.[10] Though CT and MRI are both sensitive and specific for soft tissue infections, they are more costly, often more difficult to obtain quickly, and, in the case of CT, expose the patient to the risks of IV contrast and ionizing radiation. In the case of ill, unstable, or hospitalized patients, US has the advantage of bedside capabilities.

US can locate a fluid collection thus determining the need for an I & D and it may help determine the need for consultation or further imaging. If no fluid collection is found, it may help avoid unnecessary procedures.[6] A foreign body contributing to an infection may also be located.[11] There is evidence that US can indicate the responsible pathogen for SSTIs as abscesses due to CA-MRSA have been shown to have different characteristics such as an irregular shape and indistinct borders.[12] As noted above, US may be useful for demonstrating the presence of subcutaneous emphysema and/or deep tissue stranding or edema which are characteristic of necrotizing fasciitis.[5] Early recognition of deep or necrotizing infections is key to their diagnosis and treatment since early surgical intervention is vital to prevent further morbidity and mortality.

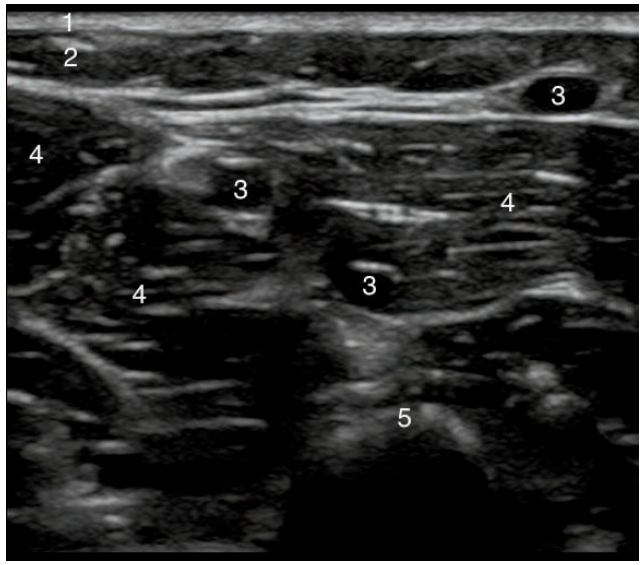


Figure 1
Normal skin. At the top of the image is normal epidermis/dermis (1) – a thin hyperechoic (bright white) line. Below the skin is the subcutaneous tissue (2) - a hypoechoic (gray) area. Anechoic (black) blood vessels (3) are shown in cross-section. The hyperechoic deep fascia surrounds muscles (4) and bone (5).

As discussed, skin and soft tissue ultrasound is a skill that is easily learned and interpreted. Ideally, a high frequency probe should be selected to scan the area of interest. A high-frequency probe (greater than 8 MHz, often referred to as a vascular probe), allows for greater image resolution and clarity than low-frequency probes when scanning superficial structures. The linear footprint of a high frequency probe has a flat face which allows maintenance of good contact with the skin. Using ample amounts of ultrasound gel will decrease the amount of air between the transducer and the patient's skin, producing a cleaner image.

Obtaining high quality US images in SSTI may occasionally prove difficult because of patient discomfort or because of a lesion on a small anatomical area, such as digits. In these instances an acoustic standoff pad is useful. An acoustic standoff pad is a commercially available

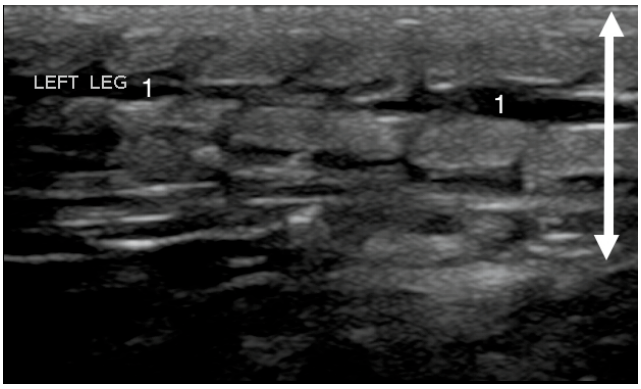


Figure 2
Cellulitis. This is an example of skin and soft tissue with cobblestoning. Note the hypoechoic fluid (edema (1)) separating the subcutaneous tissue and fat. The subcutaneous tissue (double arrow) is thickened and there is loss of the normal hyperechoic epidermis/dermis at the top of the image. Also, note the loss of normal landmarks deep to the subcutaneous tissue.

gel-filled pad to assist the clinician with imaging extremely superficial structures by increasing the distance between transducer and the area of interest. These products may be cost prohibitive and a water bath, a reliable and free alternative, has been shown to provide the same benefits.[13] Simply place the patient's hand or foot into a basin of water and obtain images by hovering the transducer in the water close to the anatomic region of interest. Scanning the area of interest in two perpendicular planes is another important practice that will allow the sonographer to better delineate the lesion.

Familiarity with the normal skin and soft tissue anatomy and their ultrasonographic appearance is necessary to recognize the appearance of pathological findings. Skin (the epidermis and dermis) appears as a thin, homogenous, and hyperechoic line immediately underneath the transducer. Skin resides superior to the superficial fascia, which is a fibrous connective tissue layer that appears hyperechoic on ultrasound. Beneath the superficial fascia lies the subcutaneous tissue, mainly composed of adipose tissue and superficial nerves, arteries, and veins. Adipose tissue appears hypoechoic with a thin line separating lobules. Arteries and veins have an anechoic appearance and will either be circular or tubular depending on the transducer's orientation. Deep to the subcutaneous tissue is the deep fascia, another hyperechoic layer, which surrounds muscles and bones. Muscles are hypoechoic with a striated pattern, surrounded by the hyperechoic fascia, while bones are hyperechoic on the anterior cortex, which casts an acoustic shadow inferiorly. (See Figure 1.)

While the ultrasonographic findings associated with cellulitis are nonspecific, when used in conjunction with the clinical context (redness, warmth, and pain), they can be used to confirm the diagnosis and rule out an abscess. The edema and inflammation in the skin and subcutaneous tissue that results from cellulitis is responsible for the changes visible by ultrasound. The most common finding seen with cellulitis is described as "cobblestoning." (See Figure 2.) Cobblestoning refers to areas of hypoechoic fluid that separate the subcutaneous tissue and fat in a reticular pattern similar to the spaces along a cobblestone street. Other findings may include thickened, hyperechoic skin and loss of detail in the subcutaneous tissue with increased echogenicity. Comparison to normal skin on the unaffected side can help the sonographer recognize subtle abnormalities.

An abscess can cause many findings on ultrasound. Most abscesses are surrounded by some degree of cellulitis or soft tissue edema, therefore cobblestoning is often present adjacent to or surrounding the fluid collection. Abscess cavities are usually round, though they can be irregularly shaped, and have an anechoic or hypoechoic center from the combination of purulent material and blood. (See Figure 3.) Abscess cavities will also have posterior acoustic enhancement, an artifact that occurs because the acoustic energy of the ultrasound beam is less attenuated through the liquid center of the abscess, creating a hyperechoic shadow along the posterior wall of the abscess. Very rarely, the contents of an abscess may appear isoechoic or hyperechoic due to loculations or very dense fluid. Ultrasonic fluctuance is the term used when the sonographer applies gentle pressure over an abscess cavity and is able to see the abscess contents swirling around inside. This technique may be especially helpful when the abscess cavity is isoechoic or hyperechoic.

Significant pitfalls do exist in the use of ultrasound when evaluating patients with an SSTI. As noted above, not all abscesses are hypoechoic. Occasionally they can be sonographically subtle and may result in a false-negative ultrasound examination. Abscesses that are in or around muscle tissue or deep and obscured by overlying hyperechoic soft tissues, can appear isoechoic and, thus, be difficult to identify. The operator's skill and training can also play a role. The ability to appropriately optimize the image via use of appropriate frequency, focus, depth settings, and transducer pressure may help avoid this type of hazard.[14]

Operator skill is also required to differentiate an abscess from some other causes of skin swelling such as a pseudoaneursym, hematoma, herniated bowel, lymph node, etc. Prudent use of ultrasound can assist in the

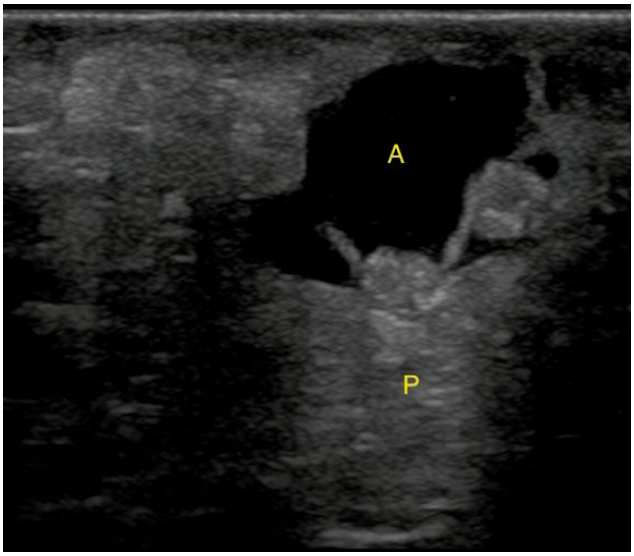


Figure 3
Abscess. The abscess (A) is shown deep to the skin and located within the subcutaneous tissue. The abscess is a round, anechoic (black) cavity with hyperechoic posterior acoustic enhancement (P).

identification of these other etiologies. Color flow Doppler sonography will aid in recognition of adjacent vascular structures and may also detect blood flow through a pseudoaneurysm. Lymph nodes are highly vascular and should demonstrate strong color flow throughout while abscesses should not. Compression of the lymph node will not result in the swirling flow of fluid seen in abscesses described above. Herniated bowel may be differentiated from an abscess by the presence of peristalsis.[15] Distinguishing an abscess from a hematoma can be quite difficult, as both typically appear to be a hypoechoic fluid collection. The stasis time of the hematoma will affect the appearance, with established clots appearing more hyperechoic. As a rule, pus is heterogeneously echogenic while clotted blood appears uniformly echogenic. [16] The ability to differentiate an abscess from some of these other abnormalities can depend on the skill of the sonographer and clinical correlation may often be the deciding factor.

US can be used to identify structures near a planned incision site for the I & D of an abscess. Vasculature, nerve bundles, and tendons can be localized and, thus, avoided by the operator. If these structures are located too close to the planned incision site, the physician should consider consultation with a surgeon for performance of the procedure.[14]

Although there is some evidence that US may be useful in the diagnosis of necrotizing fasciitis, the studies are limited and if clinical concern exists for a deeper or more extensive infection, appropriate consultation and/or imaging should still be obtained.[5,14]

Despite the above drawbacks, US has been shown in multiple studies to be useful in the diagnosis and treatment of SSTIs. In some instances, management may be changed, ultimately benefitting patients. Though clinical judgment should always be the deciding factor, US is an easy, fast, and proven way to augment decision making in SSTIs.

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None reported. **MM**

Buyer Beware: Pitfalls in Toxicology Laboratory Testing

by D. Adam Algren, MD & Michael R. Christian, MD

Given the ramifications involved it is important for health care providers to understand the pitfalls in interpreting urine drug screen results.



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Abstract

Urine drug screens are commonly used in various clinical settings and situations. Immunoassays are the most commonly available method of testing for urine drug screens in hospitals. Although convenient, immunoassays are prone to false positive and false negative results. It is important for the health care provider to understand the principles of the laboratory methods involved with urine drug screens as this will help guide appropriate result interpretation and therefore improve clinical care.

Introduction

Laboratory testing, including urine drug testing, is often utilized in the evaluation and management of intoxicated patients as well as those with non-specific presentations such as altered mental status. Urine drug testing is also used in other circumstances, such as legal and forensic cases including those involving minors or sexual assault victims. Urine drug screens are also used commonly for pre-employment testing or in situations involving workplace-associated injuries. Physicians may also use urine drug screens to document compliance (or lack thereof) to prescribed opioid therapy.[1]

Historically, immunoassays were developed for employment screening.[2] Urine drug testing is now common in certain occupations such as those that involve federally regulated transportation (i.e., truck drivers and train engineers) or those employed in safety-sensitive occupations (i.e., operating large industrial equipment).[3] Interpretation of drug test results in this setting is often performed by a medical review officer, who is trained and certified in result interpretation. Given the ramifications involved it is important for health care providers to understand the pitfalls in interpreting urine drug screen results.

Knowledge of laboratory methods involved with urine drug testing help to facilitate test result interpretation. Multiple methods exist to assess for the presence of drugs in the urine, however only a few methods are commonly used in hospital laboratories. Immunoassays are the most common utilized by hospital laboratories as they are easily automated for laboratory personnel. They have several advantages in that they are relatively inexpensive, are not labor intensive, and have short turn-around time to obtain results.[4] Immunoassays rely on a chemical reaction between an antibody and drug of interest. For each drug class on the immunoassay there is an antibody to a

representative drug in that class (i.e. the opiate class often uses an antibody to morphine). A critical concept is that not all drugs within a class have similar chemical structures and therefore may or may not react with the antibody included in the assay.[4] Depending on the manufacturer there may be variable cross reactivity to various substances (discussed in further detail below). The manufacturer often does preliminary testing and reports some agents in their package insert known to cross-react with each class. This list should not be considered exhaustive as many unlisted substances cross react. The sensitivity and specificity of the various components of the immunoassays also can vary between manufactures as well. Thus, health care providers should be aware of the specifications of the immunoassay that is used by their laboratory.

Several other advanced laboratory drug screening techniques are available to the clinician but are less commonly employed by hospital laboratories. Thin layer chromatography (TLC) and gas chromatography/mass spectrometry (GC/MS) are two other methods used for urine drug testing.[5] The advantage of both is that they can screen for a higher number of substances. TLC tends to be less sensitive than immunoassay but is more specific.[5] GC/MS is both more sensitive and specific than immunoassay.[5, 6] Both are generally more expensive, slower, and not readily available for acute management. Given the poor sensitivity and specificity of immunoassays the clinician should consider obtaining more definitive confirmation (such as GC/MS), especially in cases with forensic or legal ramifications. There are multiple reputable reference laboratories that perform such testing and the clinician should discuss with their own laboratory personal regarding send-out laboratory procedures.

There are several other limitations that clinicians should be aware of when interpreting urine drug screens. Each analyte of the UDS has a cutoff or detection level of specified urine metabolite above which the test will be positive. Although these values are applied to clinical testing these cutoff limits were originally developed for workplace testing to decrease false positives (i.e. increase specificity) given the large volume of employment testing performed.[3] How these cutoff values apply to clinical medicine and determination of intoxication is largely unknown.[7] It is possible (depending on dose, pharmacokinetic elimination patterns, and timing of last exposure) for a patient to have be exposed to a substance and have a negative urine drug test. Conversely, it is also important to be aware that some components of immunoassays lack specificity and are prone to false positive results (discussed below).[1, 4, 5] Other limitations involve understanding that detection times in the urine vary significantly based on multiple factors including: dose, elimination half-life, urine pH, urine dilution, frequency of use, and time of last use.[8] Table 1 lists general detection times for urine drug metabolites.

Table 1
Length of Time that Urine Drug Screens Can Detect Drugs since Last Use*

Substance	Length of Detection
Amphetamines	3 days
Barbiturates	
Short/Intermediate acting (butalbital)	24-72 hours
Long acting (phenobarbital)	2-3 weeks
Benzodiazepines	
Short acting	3 days
Long acting	3 weeks
Cannabinoids	
Single use	3 days
Heavy user	4-6 weeks
Cocaine	3-5 days
Opioids	3-5 days
Phencyclidine	8 days

compiled from references 4, 7, 8

Amphetamines

Amphetamines are prescribed most commonly for attention deficit hyperactivity disorder, but are also widely misused and abused. Many illicit and designer/synthetic amphetamines exist such as metamphetamine and methylenedioxymethamphetamine (MDMA, ecstasy). Immunoassays are a good screening testing for basic amphetamine compounds such as amphetamine salts (ADHD medications) and methamphetamine. There are some immunoassays that screen specifically for methamphetamine. Most general amphetamine immunoassays will often be positive as methamphetamine is metabolized to amphetamine. Although the sensitivity is high for amphetamine salts there is poor specificity due to a large number of substances that cross react and result in false positive results. Any pharmaceutical that has a phenylethylamine structure (See Figure 1) within the compound can result in a false positive. Numerous substances have been shown to result in false positives (See Table 2). Each immunoassay has slightly different sensitivity and specificity to these agents but due to widespread use of many of these agents false positives are common. The sensitivity for other designer or synthetic amphetamine compounds is variable. Substances such as

Table 2
Agents Known to Produce False Positive and False Negative Urine Immunoassays*

	False Positive	False Negative
Amphetamines	Amantadine Buproprion Ephedrine Labetolol Methylphenidate Phentermine Pseudoephedrine Ranitidine Seligiline Trazadone	MDMA (ecstasy) Synthetic amphetamines (cathinones, bath salts, etc)
Benzodiazepines	Oxaprozin Sertraline Efavirenz	Alprazolam Clonazepam Lorazepam
Cannabinoids	Ibuprofen Naproxen Efavirenz Baby washes	Synthetic cannabinoids
Opioids	Poppy seeds Quinolones Verapamil	Fentanyl Hydrocodone Hydromorphone Meperidine Methadone Oxycodone
Phencyclidine	Dextromethorphan Diphenhydramine Ketamine Tramadol Venlafaxine	
Tricyclic Antidepressants	Carbamazepine Cyclobenzaprine Diphenhydramine Phenothiazines	

*compiled from references 4 and 7

MDMA and "bath salts" have variable cross-reactivity but are often not detected.[9]

Barbiturates

The barbiturate class is still included on many assays, however, it has less clinical relevance since these are prescribed and/or abused infrequently. There are two main barbiturates that are still prescribed occasionally in the United States. Phenobarbital, once a mainstay in seizure management, has become less attractive for seizure management and has been replaced by anticonvulsants with better side effect profiles. Butalbital is another barbiturate that is formulated as a combination product with acetaminophen and caffeine and is still prescribed for the treatment of migraine headaches. Other barbiturates are used as intravenous sedation or rarely prescribed. The barbiturate immunoassay looks for the structure of secobarbital as a representative for the entire barbiturate class.[10] The most commonly used agents such as phenobarbital and butabital are reliably identified with good sensitivity as is primidone, which is metabolized to phenobarbital.[10] There have been occasional reports of substances resulting in false positives; both ibuprofen and naproxen have been noted to result in false positive test results.[10] But, in general the barbiturate immunoassay has good sensitivity and specificity.

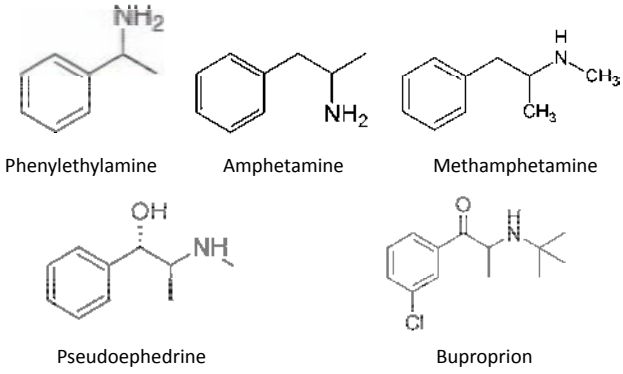
Benzodiazepines

Benzodiazepines are widely prescribed for various medical conditions and are also commonly abused. Similar to the other drug classes on immunoassays the benzodiazepine class is subject to poor sensitivity and specificity. Oxazepam, a metabolite of diazepam and chlordiazepoxide, is the chemical that most immunoassays are designed to detect.[4] There are some commonly used benzodiazepines (i.e., alprazolam, clonazepam) that can result in negative testing results although cross-reactivity is not uncommon. There are also several reports of NSAIDS and an HIV medication (efavirenz) producing false positive results (See Table 2). Flunitrazepam is a benzodiazepine that, while not legal in the United States, can be purchased legally in Mexico and Europe. It is a very potent benzodiazepine that has been used in drug-facilitated sexual assaults since it produces profound impairment and amnesia and is not detected on routine immunoassay drug testing.[11]

Cannabinoids

Cannabis is the most widely used illicit drug. As more states decriminalize the use and possession of cannabis, its use will likely become even more widespread. The major psychoactive chemical in cannabis is delta-9-tetrahydrocannabinol (THC). Urine drug screens are designed to detect 11-nor-delta-9-tetrahydrocannabinol-9-carboxylic acid (9-carboxy-THC). Due to the high lipid solubility and slow excretion of 9-carboxy-THC into the urine, one time use of cannabis can cause a positive urine drug screen for three days up to one week. Heavy, daily cannabis users can have a positive urine drug screen for 4-6 weeks after cessation. Although considered one of the more specific items on the urine drug screen, false positives for cannabis have been reported with dronabinol, efavirenz, NSAIDs, promethazine, riboflavin, ethacrynic acid, and baby soaps.[4,12,13,14] Of note, newer synthetic cannabinoids (i.e., JWH-018, "spice", "K2", etc.) are not detected by the standard urine drug screen.

Figure 1
Structure of Phenylethylamine



Phenylethylamine | Amphetamine | Methamphetamine

Pseudoephedrine | Buproprion

Cocaine

Cocaine has been used for its stimulant properties for centuries. It is derived from the Coca plant and then processed into different forms such as crack (which can be smoked) or powder cocaine. Cocaine is metabolized to three metabolites: norcocaine, ecgonine methyl ester, and benzoylecgonine (BE). Commonly performed immunoassays generally detect BE.[15] Unlike most drug classes that are tested for on immunoassays the cocaine assay is relatively sensitive and specific for cocaine. False negative testing could occur if the urine is collected shortly after use and an insufficient amount of BE has been excreted in the urine. Otherwise, it is a sensitive test to determine recent exposure to cocaine. False positives have not been reported; although it is possible that a positive test could result from drinking Coca tea which is commonly available in South American but is illegal in the United States since does contain small amounts of cocaine.[4]

Opioids

Although often used interchangeably, opiates and opioids refer to different classes of xenobiotics. Opiates are derivatives of the opium poppy (morphine and codeine). Opioids refers to a very broad class of drugs with opium-like effects (hydrocodone, oxycodone, propoxyphene, hydromorphone, fentanyl, methadone, propoxyphene, etc.). Most urine drug screens are designed to detect opiates (namely morphine) and drugs metabolized to morphine by the human body (i.e., heroin) and often "miss" the majority of semi-synthetic and synthetic opioids; although, cross-reactivity does occur and is assay dependent. False-positive opiate tests have reportedly been caused by dextromethorphan, diphenhydramine, quinine, quinolones, rifampin, verapamil, and poppy seeds.[4] In the hopes of testing for medical adherence, some urine drug screens specifically include methadone. Of note, false positive methadone screens have been reported to be caused by quetiapine, doxylamine, olanzapine, diphenhydramine, and verapamil.[16]

Phencyclidine (PCP)

Phencyclidine is a dissociative agent structurally related to ketamine. Although not fully pharmacologically understood, PCP is a N-methyl-D-aspartic acid (NMDA) receptor antagonist. It has a wide range of effects depending on the dose and the patient. Effects include dissociation, euphoria, decreased inhibition, hypertension, tachycardia, and nystagmus. Patients can be comatose or extremely combative. Clinically, a false positive urine drug screen can be due to numerous xenobiotics: dextromethorphan, diphenhydramine, doxylamine, ibuprofen, imipramine, ketamine, meperidine, venlafaxine, buproprion, methylenedioxpyrolvalerone (MDPV), and tramadol.[4, 17, 18, 19]

Tricyclic Antidepressants (TCAs)

Although not a "drug of abuse", many urine drug screens also test for tricyclic antidepressants due to the high number of mortalities seen with TCA overdoses in the 1980s and 1990s. Other ringed xenobiotics like carbamazepine, cyproheptadine, cyclobenzaprine, and quetiapine have been reported to cause false positives. Likewise, structurally similar agents like diphendyramine, hydroxyzine, cetirizine can also cause false positive TCA screens.[4, 20, 21, 22]

Utility in Clinical Management

At some point in medical training, all physicians-in-training have been asked the loaded question, "What are you going to do with the results of that test?" The urine drug screen is no different. Oftentimes, the physician orders a urine drug screen "to see if the patient is on something." Hopefully, the aforementioned discussion of false positives, false negatives, laboratory cutoffs, etc. for the various drugs of abuse has provided evidence that this logic is fraught with error.

A positive or negative urine drug screen is just a yes or no answer. That is to say, the results of a urine drug screen are not quantitative. Consider other quantitative toxicologic testing (i.e., serum salicylate concentration, serum acetaminophen concentration, and blood alcohol concentration). These quantitative assays have the ability to change clinical management based on their numerical result. A urine drug screen positive for cocaine, on the other hand, does not mean that the patient's presenting signs or symptoms can be explained by the clinical result. Consider a patient with a low-grade fever, tachycardia, and altered mental status. A "frequent flyer" with a urine drug screen positive for cocaine may result in early closure of the diagnostic work-up in a patient whose symptoms are due to meningitis, pneumonia, urinary tract infection, or countless other possibilities.

A negative urine drug screen does not "rule out" that a patient's presenting signs and symptoms are due to a drug

of abuse. As mentioned previously, the immunoassay for benzodiazepines is designed to detect oxazepam. Some of the more commonly abuse benzodiazepines like alprazolam (Xanax) and clonazepam (Klonopin) are not metabolized to oxazepam and would then be "missed" by most urine drug screens.

Multiple studies in the adult and pediatric populations confirm that the results of a urine drug screen very rarely change clinical management.[6,23,24,25,26,27] The cost of the urine drug screen varies widely between institutions. The cost of misdiagnosis due to the misinterpretation of the urine drug screen is likely very similar between institutions.

There are certainly clinical scenarios when a urine drug screen should be ordered. Most commonly, a urine drug screen is required by receiving mental health institutions. While there is some evidence that the results of a urine drug screen rarely change the management of psychiatric conditions[28], in clinical practice most emergency physicians still have to send urine drug screens, as well as other labs "screening" for medical conditions, as a requirement by mental health institutions. Urine drug screens can also have important implications in child abuse and neglect cases.[29] Positive screens should be confirmed by GC/MS and / or quantitative levels of the specific drug of abuse in question should be sent in these types of cases. Lastly, urine drug screens can also provide some useful information in certain clinical situations. The urine drug screen has to be interpreted in the light of its many short-comings.

Conclusion

Urine drug screens are commonly ordered by emergency physicians. The results of a UDS rarely change clinical management. Among the agents that are tested for by a UDS, the sensitivity and specificity vary greatly as does the length of time that a test is positive for since the last use. Given the aforementioned short-comings of the UDS, the results of this test (positive or negative) should be interpreted with caution.

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None reported.

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The General Approach and Management of the Patient Who Discloses a Sexual Assault

by Srikala Subramanian, MD & Jennifer S. Green, RN

Providers that deliver care to survivors of sexual assault have the duty to facilitate comprehensive medical care, a sensitive TIC response, competent forensic documentation and evidence collection, supportive and safe discharge planning, and fact and/or expert testimony.





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Abstract

The effects a sexual assault on a survivor can be profound and multifaceted. Some of the aftermath may include bodily and/or anal/genital injury, sexually transmitted infection (STI) or disease (STD), post-traumatic stress disorder (PTSD), depression, suicidal ideation, and pregnancy. There is no typical experience or survivor response. So, if a survivor presents to the Emergency Departments for care, it is imperative for healing that the response is stabilizing, coordinated, and compassionate. Immediate needs of a survivor of sexual assault include: medical and/or psychiatric evaluation and stabilization, activation of community advocacy to the bedside, mandated reporting as directed by state statutes, offering and conducting (if desired by the survivor) the Sexual Assault Forensic Exam (SAFE), collaboration with law enforcement (if desired by the survivor), prophylactic medications for STI and STD, pregnancy risk evaluation and care and safe discharge planning. Those providing medical and forensic care must always be prepared to provide testimony as either a fact and/or expert witness.

Introduction

Sexual assault (SA) is defined as any type of sexual contact or behavior that occurs without the explicit consent of the recipient of the unwanted sexual activity. SA may also include psychological coercion or taking advantage of an individual who is under duress, incapacitated, or unable to make decisions.[1] A timely, high-quality medical forensic examination can potentially validate and address sexual assault patients' concerns, minimize the trauma they may experience, and promote their healing. At the same time, it can increase the likelihood that evidence collected will aid in criminal case investigation, resulting in perpetrators being held accountable and further sexual violence prevented.[2]

In April of 2013, the U.S. Department of Justice Office on Violence Against Women released the Second Edition of A National Protocol for Sexual Assault Medical Forensic Examinations for Adults

Table 1
Application of Trauma Informed Care to the Care of the Patient that Discloses Sexual Assault

Safety	Knock on the door and ask permission to enter the patient's room Meet with the person before they disrobe Ask the person to disrobe only when necessary or only partially disrobe Provide and clearly identify washrooms Take time to familiarize the person with the physical environment Ask about comfort level with lighting Share control Show respect Use a warm and compassionate manner to build rapport
Trustworthiness	Explain all procedures in terms the person can understand Tell the person what to expect and how long it will take Ask the person what he or she wants
Choice	Ask if you can touch them each time Ask before you invite in additional staff Ask if you can close the door Allow the person to decide where to sit in the room Explain rationale for each procedure. What the procedure will feel like and make appropriate modifications to reduce retraumatization Obtain consent for each part of the exam performed
Collaboration	Ask "What are your top worries or concerns" and address these first if possible Share information Encourage the person to make decisions about treatment
Empowerment	Ask "What happened to you," not "What is wrong with you?" Never ask "Why" questions as they imply fault Take time with the person so he or she feels genuinely heard Ask if the person has preferences related to or has had difficulty with a particular procedure Ask the person what you should know before you begin the procedure Ask if there is a way you can make the procedure easier for the him or her Ask if there is a way you can make the person relax: like a different position Pay attention to body cues; many survivors have been conditioned to be passive and defer to authority and so may not disclose distress during a procedure

Table 2
Elements of the SA History*

Medical History	Information pertinent to the interpretation of forensic findings e.g. recent injury, current menstruation, surgery on reproductive organs etc.
Recent Consensual Sexual Activity	To eliminate consensual partners as suspects, as there may be DNA or trace evidence remaining and/or injury unrelated to the assault. Date, time, location of penetration and ejaculation should be recorded for any/all consensual partners for 7 days prior to the sexual assault.
Assault-Related Medical History	Loss of consciousness, memory loss, pain, obvious injury, vomiting, etc.
Sexual Assault Details	Date and time of assault, position, sequence, ejaculation, use of lubricants and/or condoms, type of contact (genital and/or nongenital), penetration, use of objects
Nature of the Physical Assault	Verbal and nonverbal threats, use of weapons, degree of force used (restraints, physical blows, strangulation,) voluntary or involuntary ingestion of drugs and/or alcohol that were utilized to facilitate the assault. Any injury to perpetrator. Location of the SA including description of physical surroundings (e.g. couch, rug, grass, car, etc.)
Post Assault Activities	Time and certain actions that can destroy physical evidence (e.g. urination, defecation, vomiting, bathing, douching, removal or insertion of anything in the vaginal, rectal or oral cavity, brushing teeth, mouth wash, genital or body wipes, eating, drinking, smoking, use of drugs etc.)
Suspect Information	Limited information only such as number of suspects, age, race, relationship, sexual dysfunction, etc. (details will be obtained by law enforcement)

*Adapted from the International Association of Forensic Nursing

and Adolescents which is not specific to jurisdictions but provides a comprehensive and victim centered approach. Best practice supports can be found on the www.SAFEta.org website including sample forms for the Consent for SAFE, Forensic Photography, and Notification/Activation of Law Enforcement, Sexual Assault Medical Forensic Examination Flowsheet, and Chain of Custody. This site is also provides resources and guidance for development of community Sexual Assault Response Team (SART) and Sexual Assault Nurse Examiner (SANE) Program Management.

Approach To Survivors of Sexual Assault

Because sexual assault is one of the most invasive and intimate forms of violence, a Trauma Informed Care (TIC) approach should be utilized. TIC is an appreciation for the high prevalence of traumatic experiences in persons who receive services. It involves thorough understanding of the profound neurological, biological, psychological and social effects of trauma and violence on the individual. During traumatic experiences, stimuli are received into the body by the five senses. Retraumatization is a situation, attitude, interaction, or environment that replicates the events or dynamics of the original trauma and triggers the overwhelming feeling and reactions associated with them. In a SAFE exam, an examiner is literally going to every place on the body that has been traumatized and/or violated.

Trauma-Informed Care Philosophy outlines a kind of universal precautions. Care providers do not know what kinds of experience's patients have had as they present for services, so we approach them in a universally sensitive manner to minimize retraumatization. Antidotes to Retraumatization are safety, trustworthiness, choice, collaboration, and empowerment. Table 1 outlines these antidotes and recommends concrete application of these TIC tools for most sensitive approach and practice. [5]

Triage, Medical Evaluation, and Treatment

When a patient presents and reports a sexual assault, triage the patient as a medical emergency (no less than a level 3 in a typical 5-tier emergency department triage system). Promptly place the patient in an available room. If a room is not available, place the patient in a secure and quiet area away from the waiting room. Obtain consent for medical evaluation and treatment per hospital policy. Immediately assess for and treat life-threatening conditions, serious injuries or psychiatric emergencies.

Use caution when treating injuries and/or assessing the patient to prevent destruction or contamination of potential evidence. For example, wear non-powdered gloves for physical contact, avoid IV attempts over wounds, avoid Foley catheter insertions or obtaining urine specimens, and avoid giving anything PO or PR unless necessary for medical stabilization. Instruct patient not to wash, change clothes, urinate, defecate, smoke, drink, or eat unless necessary to treat acute medical needs. If clothing must be removed, do not cut through existing tears or stains. Activate bedside advocacy and Social Work Services if indicated to assist with mandated reporting. (e.g. patient is a minor, elderly, incapacitated, or if other concerns arise). [2]

Consent

Assess the patient's communication needs and provide support services and assistive devices according to hospital policy, including interpreter services if applicable. Identify patients with disabilities; assess their ability to consent to treatment and SAFE exam, and contact parent/guardian if indicated. Hold narcotic and other mind altering medications unless medically necessary, until informed consent has been obtained for the exam.

A patient should be informed that although written consent is obtained, he or she can decline any part of the exam for any reason. The reason for declining a portion of the exam should be documented using direct quotes from the patient.

The Forensic History

The SAFEta website has forms that can be adapted to hospital protocol or utilized "as is" for obtaining the medical forensic history of an assault. The Department of Health and Senior Services (DHSS) also has forms that can be downloaded at the www.dhss.mo.gov website. Both of these forms contain body maps for documenting injury and debris. These medical forensic records should be kept separate from the hospital medical record to be compliant with guidelines set forth by The Violence Against Women Act (VAWA).

Questions regarding the forensic history should be asked least invasive to most invasive. Re-telling of events may cause re-traumatization. So, whenever possible, forensic history should be obtained with advocacy and

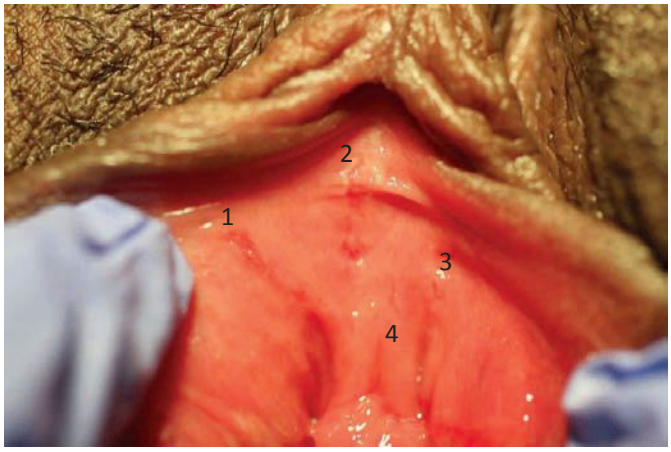


Figure 1

1 Erythema (redness)
Tenderness–noted laceration vestibule and labia minora between 10 and 11 o'clock active bleeding noted

2 Erythema (redness)
Swelling
Tenderness - noted laceration at 12 o'clock from clitoral area to vestibule. Active bleeding noted.
3 Erythema (redness)
Tenderness - noted laceration between 1 and 2 o'clock vestibule. Active bleeding noted.

4 Erythema (redness)
Tenderness - noted laceration at 1 o'clock in vestibule. Active bleeding noted.

* 1.5 hours post assault

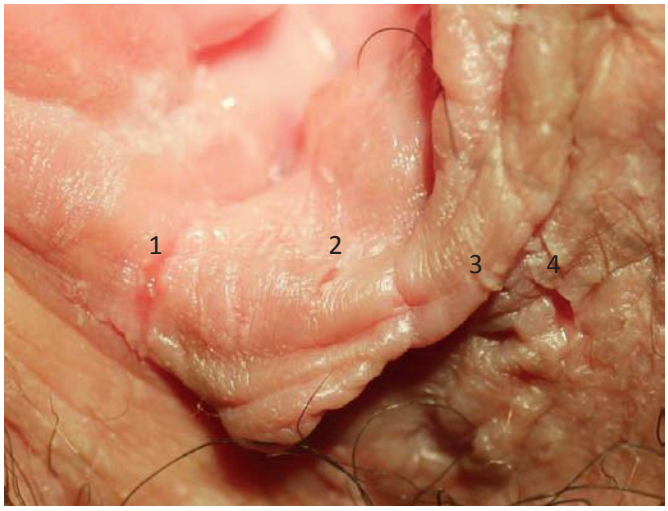


Figure 2

1 Laceration/Tear
Tenderness from the fossa navicularis to the posterior fourchette between 7 and 6 o'clock

2 Laceration/Tear
Tenderness - noted on the left labia minora at 5 o'clock

3 Laceration/Tear
Tenderness - noted on left labia minora between 4 and 5 o'clock

4 Laceration/tear
Tenderness laceration between 4 and 5 o'clock left labia majora

*7.3 hours post assault

law enforcement to minimize the number of times the patient discloses events and to ensure proper emotional support. Language consistent with the experience should be considered. For instance, instead of asking, did you perform oral sex? Ask, 'did he force his penis into your mouth?' Answers to these questions will guide evidence collection. A narrative of the events of the assault should include date, time, location(s) and description of the assault in the patient's own words using quotations. If a slang term or nickname is used to describe the events or body parts, these should be clarified by the examiner.

Forensic Sexual Assault/Evidentiary Examination

Each jurisdiction has a designated sexual assault evidence kit with specific directions for collection as requested by the crime lab that will be analyzing specimens. Examiners are encouraged to collaborate with the crime lab to ensure proper evidence is collected, preserved, and packaged according to preferences. Exams and order of evidence collection can always be altered to fit the emotional needs of the patient. Deviation from the requested order of collection should be documented and a reason provided. Many crime labs request smears on microscopic slides from any area with suspected semen which may include oral, vaginal, cervical, anal, rectal, penile, and areas of positive wood's lamp illumination. These should be collected and submitted according to the assault history and examination. (See Figures 1 and 2.)

Chain of Custody

During and immediately following a SAFE exam, the evidence will be packaged and sealed by the examiner who will maintain chain of custody. Examiners should be aware of the crime lab's requirements on collection, packaging, labeling, storage, handling, transportation, and

Table 3
Recommended STD and Pregnancy Prophylaxis and Follow-up

Offending Agent	Recommended Prophylactic Treatment	Recommended Follow-up
N. gonorrhoeae	Ceftriaxone 250 mg IM single dose	None recommended if prophylaxis given
C. trachomatis	Azithromycin 1 gram single oral dose or Doxycycline 100mg twice daily orally for 7 days	If no prophylaxis given follow-up in 1-2 weeks for repeat cultures
T. vaginalis	Flagyl 2 gm orally single dose	None recommended if prophylaxis given
Hepatitis B	HepB vaccine without HBIG	Follow-up doses should be given at 1-2 months and 4-6 months after first dose.
T. pallidum (syphilis)	NONE	Follow-up serum/serologic tests at 6 weeks and 3 months
HIV	The preferred PEP regimen for sexual assault is the same as that for other types of non-occupational exposures and occupational exposures: Tenofovir 300 mg PO daily + Emtricitabine 200 mg PO daily **Plus** Raltegravir 400 mg PO twice daily *or* Dolutegravir 50 mg PO daily See *HIV Prophylaxis Following Non-Occupational Exposure* for regimen considerations when the source is known to be HIV-infected, dose adjustments for patients with renal insufficiency, drug-drug interactions, and recommended alternative regimens.	Repeat serologic testing at 6 weeks, 3 months, and 6 months
Pregnancy	Emergency contraception with Plan B or equivalent within 72 hours of vaginal penetration (consider anti-emetic)	Consider pregnancy test for confirmation at 2 weeks
Tetanus	Give dT immunization: • If skin abrasions and immunization status is unknown or greater than 10 years • If high risk wound and immunization status greater than 5 years Add Tetanus Immune Globulin (Hypertet) 250U IM to dT immunization (in separate arms) if high risk wound and no history of immunization or < 3 doses	

delivery of specimens. The examiner must remain with the evidence at all times until it is secured in designated locked area or retrieved by a law enforcement officer.[2] Examples of Chain of Custody forms can be found on the SAFEta website.

Drug Facilitated Sexual Assault

A Drug Facilitated Sexual Assault (DFSA) is when a person is subjected to sexual act while they are incapacitated or unconscious due to the effects of alcohol and/or drugs that have been taken voluntarily or involuntarily. The pharmacological effects of the drugs prevent the person from consenting or resisting. First responders must recognize that although Rohypnol and gamma hydroxy butyrate (GHB) are widely publicized as the "drugs of choice" in drug-facilitated sexual assault, assailants may use numerous other substances (including alcohol) to facilitate sexual assault. They must understand the urgency of collecting toxicology samples, if it is medically necessary, or if an alcohol- or drug-facilitated sexual assault is suspected, as well as the importance of obtaining informed consent from patients prior to sample collection. They should also be aware that collection of toxicology samples is typically separate from the sexual assault forensic evidence collection kit, and procedures for toxicology analysis may be different from that of other evidence analysis. Ideally, the first available urine sample should be collected in suspected alcohol- or drug-facilitated sexual assault cases. [2]

Examination

The examiner should carefully document signs and symptoms post assault. Documentation should include both objective and subjective findings either reported by the patient or witnesses which can include hospital staff. Signs and symptoms may include but are not limited to: vital signs, pupil dilatation, accommodation, and reaction with light, presence of vertical or horizontal gaze nystagmus, nauseas/vomiting/diarrhea, headache, dizziness, weakness, seizures, loss of inhibitions, hallucinations, and/or dissociation. It is particularly important to record the time and date of the known or suspected ingestion with the type, brand, or amount of substance and the number of times the patient has voided prior to the urine collection.

Additional evidence collection should be consistent with what the patient is able to recall about the assault. Often with DFSA, the patient will report memory loss or confusion surrounding events. Most crime labs have developed a protocol for collection of specimens from "high yield areas" to help guide collection in situations of memory loss or confusion. This protocol can be applied to all patients that report memory loss due to blunt trauma or altered mental status related to illness or disease process as well.

Prophylactic Medications

In cases of sexual assault, all patients are offered prophylactic medication to prevent gonorrhea and chlamydia infection given the high rates of infection after assault. Trichomoniasis and bacterial vaginosis can be diagnosed or excluded in the emergency department if microscopy is available; otherwise empiric treatment should be administered. Routine testing for gonorrhea, chlamydia, and syphilis is not recommended at the initial exam in the setting of sexual assault because results of that testing would determine whether the patient had an STI prior to the assault. This information can be used to bias a jury against a victim in court. [6] Table 3 has the CDC recommended STD/STI and Pregnancy Prophylaxis and Follow-up.

Follow-up Services

When providing discharge instructions, include a summary of the exam (e.g., evidence collected, tests conducted, medication prescribed or provided, information provided, and treatment received), medication doses to be taken, follow-up appointments needed or scheduled, and referrals. The discharge form could also include contact information and hours of operation for local advocacy programs.[2] Patients should be instructed to follow up for re-evaluation at appropriate intervals. In the days following the assault it may be indicated to document developing or healing injuries (for example, bruising) and complete resolution of healing or further evaluate nonspecific findings. At minimum, the patient should be scheduled for follow-up two to four weeks post assault for STI evaluation and Care, HIV testing, and administering doses of Hepatitis B vaccine if indicated.[2]

Address the patient's physical safety and

emotional well-being. Screen for domestic and dating violence and others forms of abuse. Assist patients in considering things such as:

Where are they going after being discharged? With whom? Will these individuals provide them with adequate support? (Provide information about available community resources for obtaining support and help in making the contact if needed.) Is there a need for emergency shelter or alternative housing options? (Provide options and help obtain if needed.) Are they eligible for protection orders? (Provide information and help obtain if desired.) Is there a need for enhanced security measures? (Discuss options and help obtain if desired.) If they feel unsafe, what will they do to get help? (Discuss options and help them develop a plan.) Planning must take into account the needs and concerns of specific populations. For example, if patients with physical disabilities require shelter, the shelter must be accessible and staff able to meet their needs for personal assistance with activities of daily living. [2]

Court Testimony

The SAFE examiner is performing a service to the patient by collecting evidence that could be used in a criminal proceeding during a health care examination. This naturally places the examiner as a witness in any criminal proceedings as a result of this exam, and is considered part of the role. Prepare and maintain a Curriculum Vitae. Be prepared to prove and explain qualifications and discuss educational background, clinical experience, and prior experience as a witness. Review medical forensic report, photographs, and the results of evidence analysis as part of your preparation. Meet with attorney(s) in advance and be prepared to discuss the case as well as any subsequent contact with the patient. During testimony, educate the judge/jury on terminology, SAFE procedure, policy, specifics of this exam.

Sexual Assault Response Team (SART)

The members of the SART may include but are not limited to: Sexual Assault Nurse Examiner/ Physician, Patient Advocate, Crime Lab, Law Enforcement, Prosecutors and Health Department. The goal of the team is to develop a recommended set of evidence-based practice guidelines for individuals working with survivors of sexual assault to ensure a coordinated consistent effort among these agencies. The SART should lead the community in the appropriate response by setting policy, identifying needs, and evaluating efficacy of their practice. The commitment of each SART member should include education of community during outreach, strict moral and ethical standards, and ultimately facilitate the healing process for survivors.

Conclusion

Providers that deliver care to survivors of sexual assault have the duty to facilitate comprehensive medical care, a sensitive TIC response, competent forensic documentation and evidence collection, supportive and safe discharge planning, and fact and/or expert testimony. Providers are encouraged to seek out the recommended 40 hour Sexual Assault Nurse Examiner (SANE) training as outlined by the International Association of Forensic Nurses and become board certified. Competent forensic care ultimately improves the reporting of sexual violence and successful prosecution of perpetrators and can aid in the physical and emotional healing of a patient that has survived a sexual assault.

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Disclosure

None reported. **MM**



Pediatric Refractive Surgery: A 2015 Perspective

by Erin Durrie Stahl, MD

The emerging field of pediatric refractive surgery is an interesting marriage of the rapidly progressing field of refractive surgery and the traditionally ultra-conservative field of pediatric ophthalmology.



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Abstract

Pediatric refractive surgery is an emerging field that can allow visual development in children where convention treatments have failed. The select groups of children who are eligible for refractive surgery at this young age are facing a life-long struggle with poor vision and have few other options. This article will discuss the groups of children that can benefit from this treatment, the difficulties faced in translating an adult surgery to the pediatric population and the benefits from performing the procedures.

Introduction

Refractive surgery, or surgery to eliminate the need for glasses or contact lenses, has become a common and well accepted elective surgery across the world. Adult refractive surgery is an environment with rapidly changing technology, techniques and vast advances over the past 40 years. With greater experience of refractive surgery in the adult population, the pediatric community has begun to show special interest in using these techniques to help a new population of patients. As pediatric clinicians proceed into the realm of refractive surgery, additional challenges, adaptations and concerns about this emerging practice arise. Careful consideration of the unique aspects of visual development combined with lessons learned over the history of adult refractive surgery are joined to offer children novel and effective therapies for treating select conditions.

Historical Perspective

Modern refractive surgery was introduced in 1950 with Columbian ophthalmologist, Jose Barraquer, and his development of an instrument to create a corneal flap for the purpose of correcting refractive errors termed keratomileusis. (See Table 1.) In 1974 radial keratotomy (RK), which consists of making radial partial-thickness cuts in the cornea, was introduced by Svyatoslav Fyodorov for the treatment of myopia. Excimer laser was first proposed for the treatment of corneal refractive errors by U.S. ophthalmologist Stephen Trokel in 1983.[1] Laser technology evolved rapidly and photorefractive keratectomy (PRK) was first performed on humans in the mid-1980s by Theo Seiler. As a melding of PRK and Dr. Barraquer's early thoughts on keratomileusis, laser-assisted in situ keratomileusis (LASIK) was first performed in 1990 by Lucio Burrato and Ioannis Pallikaris.

Table 1

LASIK (Laser-assisted in situ keratomileusis)
- A thin flap in created in the anterior cornea with a blade or laser
- The flap is reflected and the excimer laser is used to reshape the tissue beneath the flap
- The flap is then replaced and seals in place without sutures

PRK (Photorefractive keratectomy)
- The epithelium is manually removed from the surface of the cornea
- The excimer laser is used to reshape the surface of the cornea
- The epithelium heals over the following 3-4 days

Phakic Intraocular Lens
- Surgically implanted device
- Natural lens remains intact
- Can treat high myopia

Refractive Lens Exchange
- Surgical removal of the natural lens
- Placement of intraocular lens
- Results in loss of accommodation
- Can treat high hyperopia or myopia

When the first lasers were introduced the obvious initial candidates for treatment were those with large, often debilitating refractive errors. After initial success with the treatment of high refractive errors, clinicians began to note complications with haze, excessive corneal thinning and scarring in some patients.[2,3,4] Researchers began to look for alternative technology for the treatment of high refractive errors and reserved laser technology for low to moderate refractive errors.

The first phakic intraocular lens (PIOL) was implanted in 1990 for the treatment of high myopia.[5] This surgery placed the PIOL in the anterior chamber without disruption of the crystalline lens. Further studies have shown that the PIOL technologies provided excellent optical outcomes in patients with high refractive errors.[6,7,8] As this technology is more invasive than surface refractive procedures, risks include endothelial cell effects, cataract formation, risk for retinal detachment and the generally increased risk of intraocular surgery.[9,10]

Another treatment modality that has evolved for large refractive errors is removal of the crystalline lens with or without implantation of a low-power or plano intraocular lens (IOL).[11] This technique, termed refractive lens exchange, has been utilized for patients with large refractive errors and adult patients desiring multifocal IOLs to treat presbyopia and refractive error in one procedure.

Refractive Surgery Procedures Today

Low to Moderate Myopia and Low Hyperopia

After determination that the patient is a suitable candidate for refractive surgery (adequate corneal thickness, normal corneal architecture, absence of other pathology, realistic expectations) the majority of these low to moderate myopes and hyperopes will be excellent excimer laser candidates. (See Table 2.) Generally, laser correction (either LASIK or PRK) is the procedure of choice for refractions ranging from approximately +5.00D to -11.00D, depending on many factors identified in the preoperative visit. This is the range where this clinician finds maximization of refractive outcomes, stability, and patient satisfaction with excimer laser surgery.

High Myopia

Decisions about treatment options for moderate to high myopia often hinges on age and refractive error. In young patients with >-8.00D of myopia, laser treatments are sometimes an option when the patient has adequate corneal thickness. If there is a concern about corneal thickness, young myopic patients are often better candidates for phakic IOL (PIOL) implantation.

Moderate to High Hyperopia

As there is no FDA approved PIOL for the treatment of hyperopia, hyperopic patients have more limited surgical options. Excimer laser treatments are most effective up to +5.00D. The discrepancy between the limits for hyperopic and myopic treatment results from the relative ease in flattening the central cornea (myopic treatment) as contrasted with the difficulty in achieving a satisfactory optical result with steeping the central cornea (hyperopic treatment). Hyperopic patients outside the range of excimer laser treatments have the option of a refractive lens exchange with IOL implantation.

Excimer lasers and PIOLs are not approved for use in the pediatric population. All of these treatments are available in the United States but are used on an off-label basis in children. A thorough discussion of the risks, benefits and off-label nature of these treatments is necessary when planning for pediatric refractive surgery.

Table 2

Low to Moderate Myopia and Low Hyperopia
- +5.00 to -11.00
- If adequate corneal thickness, absence of risk factors
- PRK or LASIK

High Myopia
- Phakic IOL
- Refractive lens exchange with or without IOL

Moderate to High Hyperopia
- Refractive lens exchange

Challenges of Pediatric Refractive Surgery

As in most aspects of medicine, children are not just small adults when considering refractive surgery. There are many unique challenges that arise when considering refractive surgery for the pediatric population. Paramount in the discussion of pediatric refractive surgery is the understanding of the fundamental difference between pediatric and adult indications for refractive surgery.

Indications for Treatment

Adult refractive surgery is performed to eliminate the need for glasses and contact lenses. It is an elective procedure that patients choose to reduce hassle and simplify their lives. Pediatric refractive surgery is not considered to reduce the inconvenience of glasses and contact lenses. It is only considered in cases where visual development or overall cognitive development are at risk due to the presence of an untreated refractive error. There are two primary conditions that are most commonly treated with pediatric refractive surgery, anisometropic amblyopia and bilateral high refractive error with neurodevelopmental disability.

Anisometropia occurs when the refractive error is very different between the two eyes. This can occur due to an underlying problem with one of the eyes (for example glaucoma or myelinated nerve fiber layer) or can occur spontaneously. Depending on the degree of anisometropia, amblyopia may develop due to a poor retinal image from the eye with the higher refractive error. When this occurs, the first line treatment is refractive correction with glasses or contact lenses and then the use of an occlusive patch to treat the amblyopia. The vast majority of patients respond favorably to this treatment and the amblyopia reverses. When the vision is no longer at risk, the child will wear glasses or contact lenses until they become an adult. At this point they can choose to have elective refractive surgery. If the vision fails to respond to refractive correction and occlusive therapy, whether from poor compliance or primary failure to respond, then refractive surgery can be considered. [12, 13, 14, 15]

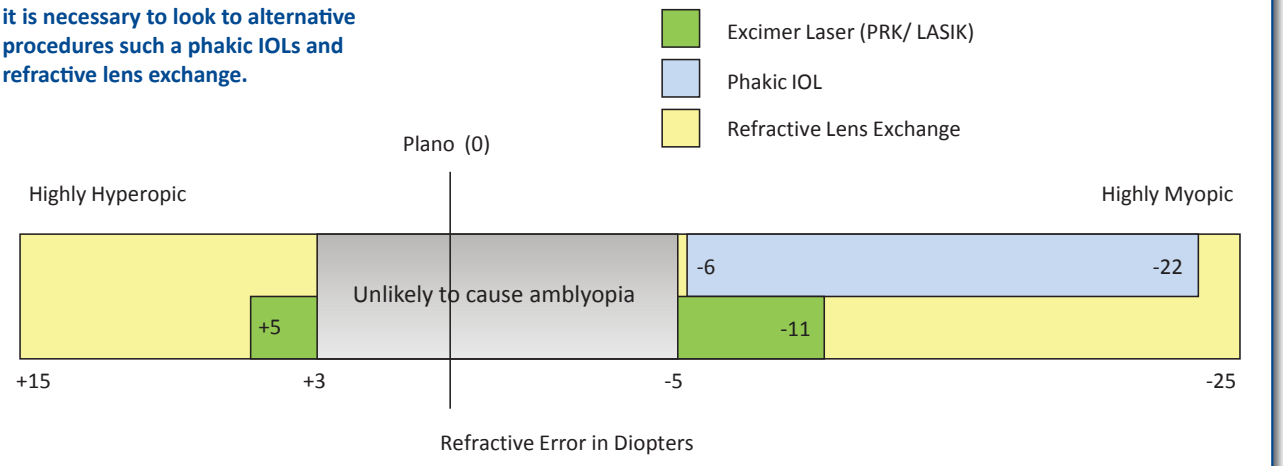
The other condition that has been addressed with pediatric refractive surgery is bilateral high refractive error with poor compliance with refractive correction. Most children with bilateral high refractive error take to wearing glasses or contact lenses very rapidly and enjoy the clear vision provided by their correction. The majority of children who refuse their refractive correction have concurrent neurodevelopmental disorders including autism, brain injury, or genetic disorder. The stimulation of having glasses on their face is often too bothersome to enjoy the benefits of clear vision. These children will immediately remove their glasses and in most cases will not allow the insertion of contact lenses. Children with mild refractive error, either hyperopic or myopic can function well without correction and do not need refractive surgery. When the refractive error is greater than 3 to 4 diopters, then refractive surgery can be considered. [16, 17]

A secondary factor in this process is the timing of treatment. Visual development occurs up until the age of 7 to 9 years. Amblyopia that goes untreated past this point is very difficult if not impossible to reverse. Children with anisometropic amblyopia or bilateral high refractive errors should be identified, conservatively treated and if treatment failure occurs, referred for surgery before reaching this age. Even after age 9, there is still the possibility for reversing a small amount of amblyopia, but effects are greater at a younger age.

Patient Cooperation

Adult laser and intraocular refractive surgeries are for the vast majority outpatient procedures utilizing only topical anesthesia. The patient is instructed to fixate on the operating light or laser target to center the treatment and assist in surgical manipulation. When dealing with a pediatric population the cooperation of the patient is much more variable. Adolescent subjects will often be able to lay still and self-fixate[18], but in surgery performed to prevent amblyopia the children will often be much too young and require sedation. In the US, studies have reported brief general anesthesia during excimer laser procedures.[19, 20] Intraocular surgeries have been preformed with general anesthesia in a similar manner to pediatric cataract surgeries.

Figure 1
With the larger refractive corrections it is necessary to look to alternative procedures such a phakic IOLs and refractive lens exchange.



Another challenge arises when considering the logistics for administering anesthesia during excimer laser treatments. Excimer lasers are cumbersome pieces of equipment and are for the most part immobile. They are usually located in outpatient surgery centers or in the office of refractive surgeons – far from the pediatric anesthesiology needed to perform sedation. Excimer laser technology is also very costly with a laser price of $100,000 and above. For the most part this problem has been solved by bringing the laser into a pediatric hospital setting, which is a solution not available to every clinician.

A final challenge of patient cooperation with pediatric refractive surgery is the difficulty in examining patients and administering post-operative medications. Adult patients can be trusted not to rub or manipulate their eye in the healing stages post-operatively and can be examined at the slit-lamp. In children, it is strongly encouraged to keep the eye or eyes covered for the first three-seven days after surgery to prevent any manipulation and decrease the risk for post-operative infection. The surgeon must become proficient in efficient examinations and slit-lamp examination may not be expected. Finally, compliance with post-operative medications is more important in the pediatric population than in the adult population. Children have a greater risk of developing post-operative corneal haze without the use of topical steroids. If this haze develops, it may exacerbate the amblyopia and temporarily negate the effects of the laser treatment.

Desired Post-Operative Correction

Planning for refractive surgery in the adult population consists as targeting a plano (no refractive error) or monovision (one eye for near vision and the other for distance vision) depending on the age or activities of the patient. Planning intended treatment and post-operative refraction in pediatric surgery is a more challenging and complicated endeavor. For the younger pediatric population undergoing surgery to prevent amblyopia, the desired post-operative refraction is plano. For older children the ideal post-operative refraction has not been established. As most children can tolerate a mild degree of hyperopia, a mildly hyperopic target may be appropriate in older children who will continue to have a natural myopic progression with growth. Although population studies have examined the growth of the eye and changes in refraction, it cannot be calculated for an individual eye at this time.[21] The key to these calculations is to keep in mind that the refractive error of the child will change with age and the refractive surgeon must have future options available to handle future refractive needs. Options for future treatments include: surface retreatment after PRK, PIOL exchange, piggyback IOL, contact lenses as the child matures and future LASIK after previous IOL.

More Challenging Refractive Errors

As discussed above in the historical section, it was discovered that using an excimer laser to treat high refractive errors often led to inferior optical and safety outcomes. The problem arises with pediatric refractive surgery in that the patients brought to the attention

of refractive surgeons are often those with very severe refractive errors. Many of these errors fall outside of the range of treatments accepted for laser refractive procedures. With the larger refractive corrections it is necessary to look to alternative procedures such a phakic IOLs and refractive lens exchange. (See Figure 1.)

Future Role of Refractive Technology in Children

Identifying and Treating Highly Anisometropic Eyes Earlier

One of the greatest hurdles to the early treatment of anisometropia and subsequent amblyopia is the problem of identifying these children at a young age. This condition is often not discovered until routine grade school vision screening when the child is nearing the age of visual maturation. When discovered and treated before visual maturation, anisometropia can be successfully treated with traditional forms of therapy including spectacles, contact lenses and occlusion therapy[22]. Future movement in pediatric ophthalmology and pediatrics may be to find modalities of identifying anisometropic children at an earlier age. It is possible that as the techniques, technology and experience with these surgical procedures expand, refractive surgery will be considered in certain cases at the time of diagnosis.

Conclusion

The emerging field of pediatric refractive surgery is an interesting marriage of the rapidly progressing field of refractive surgery and the traditionally ultra-conservative field of pediatric ophthalmology. The refractive side offers its advanced technologies and the pediatric group is charged with making conscientious and practical decisions regarding their use in children. In cases of anisometropic amblyopia and bilateral high myopia, surgeons have found clinical situations in which refractive surgery has been effective, safe, and beneficial.

Overall the field of pediatric refractive surgery shows great promise in its ability to help a small segment of the pediatric population. Maximizing visual potential in these patients who have often failed traditional therapies is the ultimate goal of these endeavors. Emerging techniques and technology may bring even more possibilities for benefit in an expanded population of infants, children and adolescents.

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Disclosure

None reported. **MM**

MSMA
Missouri State Medical Association

one hundred & fifty-seventh
ANNUAL CONVENTION

OFFICIAL MINUTES & REPORTS



April 17-19, 2015
Westin Crown Center
Kansas City, Missouri



Meet MSMA's 2015-2016 President

John O. Stanley, MD
Kansas City, Missouri

Contact: johnostanley@yahoo.com

John O. Stanley, MD, a board-certified Family Physician from Kansas City, Missouri, will serve as President of the Missouri State Medical Association in 2015-2016. He was formally installed in Kansas City, April 18, 2015, during the MSMA's 157th Annual Convention.

Dr. Stanley was born in Omaha, Nebraska, to Dr. Charles G. and Bernadine Stanley. Dr. Stanley's father was in medical school at Creighton at the time of Dr. Stanley's birth. Upon graduation, Dr. Charles moved his young family back to his hometown of Kansas City, where he became a beloved figure in his community and a family physician in the truest sense of form. Dr. Stanley's mother still lives in the family home in midtown Kansas City.

Dr. Stanley attended Missouri Western State University, where he played football, and received his bachelor's degree in biology. After a year of graduate school at University of Missouri - Kansas City, Dr. Stanley enrolled in medical school at University Autonoma of Guadalajara in Guadalajara, Mexico. Dr. Stanley and his brother Gerry (now Gerard J. Stanley, MD) lived in a converted school bus while attending medical school.

After graduating from medical school, Dr. Stanley moved to the Washington, D.C. area, where he completed his fifth pathway and internship, then his residency in Family Practice, at Prince George's General Hospital in Cheverly, Maryland. Dr. Stanley worked in the D.C. area for three years before moving back to Kansas City in 1987. Between D.C. and K.C., Dr. Stanley took a break from traditional practice and worked as a cruise ship doctor for Norwegian Caribbean Lines for a couple of months.

Upon his return to the Kansas City area, Dr. Stanley started a practice in Gladstone, where he operated as a solo family physician for ten years. In 1997, Dr. Stanley joined Briarcliff Medical Associates. He and his partners at Briarcliff then joined the multi-specialty group Meritas Health, based at North Kansas City Hospital in 2011.

Dr. Stanley is a true believer in the mission of organized medicine. In addition to his MSMA membership, he is a member and past president of Metropolitan Medical Society of Greater Kansas City, a member and past president of Kansas City Academy of Family Physicians, and a member of American Academy of Family Physicians, Missouri Academy of Family Physicians, and the American Medical Association.

Throughout his career, Dr. Stanley has greatly enjoyed making lasting connections with his patients and their family members through all stages of their lives, and with his "family" of partners and co-workers at Meritas Health Briarcliff. In his spare time, Dr. Stanley starts each day with an early-morning workout at the YMCA. He and his wife Kath frequently attend theater productions, concerts, live music shows, and art openings in Kansas City and elsewhere.

Dr. Stanley is a travel bug, and enjoys any and all new places, but his favorite place of all is his cabin in Grand Lake, Colorado, where he goes with family and friends to hike in the summer and ski in the winter. Dr. Stanley and his wife have five children, John, Suzanne, Ken,Tom, and Luke.

Goals for MSMA during Dr. Stanley's tenure are:

- To help physicians solidify their status as head of the medical team by informing our patients and our public officials of the differences between medical doctors and other health care providers such as nurses, chiropractors, psychologists, optometrists, and midwives.

- To encourage all physicians, whether independent or employed, to see the value of becoming involved in legislative matters which affect our ability to practice medicine and care for our patients.

- To import to all physicians that organized medicine is a unique and powerful voice which speaks up and stands up for physicians. **MM**

Sue Ann Greco to Lead Medical Alliance

Sue Ann Greco
St. Louis Missouri

Contact: suanngreco@sbcglobal.net



Sue Ann Greco, St. Louis County, was installed as the 91st President of the Missouri State Medical Association Alliance (MSMAA) during the Annual Meeting on April 18, 2015, in Kansas City at the Westin Crown Center Hotel.

Sue Ann's first introduction to the Alliance was in January 2009 when Dr. Meredith Payne introduced her to Angela Zylka at the St. Louis Metropolitan Medical Society installation dinner. Over the next few months, Sue Ann attended her first SLMMSA meeting, her first MSMAA Advocacy Day and Board Meeting in Jefferson City, and her first MSMAA Annual Meeting in Kansas City.

Her first position with the MSMAA was a three-year post as MMPAC Chair. In 2011 Sue Ann served as President of the St. Louis Metropolitan Medical Society Alliance, a position she also held for three years.

In 2012, Sue Ann became MSMAA Vice President of Foundation, a position she held for two years, organizing two Foundation Fundraisers, Running for the Roses Derby and a Mystery Dinner Theater.

Sue Ann's commitment to supporting organized medicine was a result of her marriage to Dr. Tom Greco, and her many years in the health care field. Sue Ann earned her bachelor's degree in nursing from Lewis University, Chicago, in 1978. She was working at the Rehabilitation Institute of Chicago and studying for an MBA in Healthcare Administration when she met her future husband at a medical student party. As he had matched to Saint Louis University's Internal Medicine residency program, the couple married and moved to St. Louis.

There Sue Ann joined a resident spouses' group, and as soon as Tom finished his residency, she earned her Master's degree in nursing at Saint Louis University. The couple had four daughters, and after seven years of teaching nursing, she began to devote herself to her children and her husband's growing private practice. PTA boards and Mothers' Club auctions were see the benefit of her boundless energy. In 2001, as the girls started going off to college, Sue Ann pursued a new career as a legal nurse consultant. Working in the medical malpractice defense arena, she saw firsthand the effects of Tort Reform on the number of frivolous law suits clogging up the court system. When she later learned that the Alliance participated in advocating for Tort Reform, she joined the group.

Currently, Sue Ann has another reason to advocate for medicine. In 2011, her husband asked her to help his practice switch over to electronic medical records. After scanning thousands of pages of medical records and learning about software program, she became the practice's office manager. This helped her understand the impact of change on independent practitioners. Sue Ann's responsibilities include helping the practice attest to Meaningful Use of their electronic record system for reimbursement, demonstrating to CMS how the practice meets Clinical Quality Measures, and getting the office ready for switching over to ICD-10.

Sue Ann chose her theme, "Eye on the Future," because she wants to see the Alliance survive and thrive. She wants all MSMAA members across the state to actively engage in the organization. By helping Alliance members envision a 100th Anniversary Celebration, she will give them the desire to invest in the future. Sue Ann believes that the MSMAA is not just about what it has been in the past, but what it can still be. As she travels across the state, Sue Ann plans to enlist members to participate to share their vision of the MSMA Alliance of the future.



MM

State of the Association: Presidential Address

by Jeffrey Copeland, MD, 2014-2015 MSMA President

It has been my pleasure to have served as your president for the past year. My duties have been extremely gratifying and rewarding, especially my travels to the various component organizations around the state.

It would be appropriate, at this time, to give you the headlines from the Missouri State Medical Association.

Tort Reform – As you know, In 2012, the Missouri Supreme Court vacated the state's $350,000 cap on non-economic damage awards in health care lawsuits. After three years of hard work, your MSMA lobbying team is, again, leading an all-out effort to repair what the Supreme Court has done and reinstate the cap before your professional liability insurance premiums double and triple as they did a decade ago.

MSMA's advocacy efforts are not limited to Missouri's borders. We have a physician team that works on a wide variety of federal government issues.

In 2014 we lobbied federal authorities on such issues as the mass terminations of physician panel members, numbering close to 1000, from UnitedHealthcare's Medicare Advantage plan; the burdensome Medicaid sterilization consent form; and the 90-day grace period under the Affordable Care Act.

MSMA organized a White Coat Rally in support of tort reform in the Missouri Capitol. Physicians from every corner of the state showed up to lobby their senators and representatives for the good of the cause.

I, and MSMA staff attended a number of local component society meetings across the state. From Liberty to Poplar Bluff, and from Hannibal to Springfield, your leadership and staff make themselves available to every active component society, no matter how large or small. The local activity of physicians is the foundation upon which this association is built.

We joined the AMA and other state medical societies in an effort to improve access to care for our veterans. MSMA created a registry of private physicians ready and willing to care for military veterans outside the VA system. Nearly 200 MSMA physicians signed up, and we shared those names with the VA.

Physicians in Missouri and a number of other states have been victims of a large-scale federal income tax scam directed primarily at physicians, and MSMA is working directly with the U.S. Secret Service to aid in the investigation. To improve advocacy support, MSMA created the Political SWAT Team that allows physicians and their spouses to give MSMA's governmental affairs team important feedback about electoral candidates and campaigns.



From left, Parlimentarian Jo-Ellyn Ryall, MD, Vice Speaker Lancer Gates, DO, and Speaker David Chalk, MD.

MSMA also held a popular and well-attended "Grassroots Advocacy Training" seminar for specialty and component society leaders.

From improving communications to hosting seminars, teleconferences, and webinars to inform you and your staff about a variety of important topics, MSMA is constantly striving to bring even more value to your membership.

The scientific content of Missouri Medicine, MSMA's journal, is accessible around the world through its PubMed database, and its partnership with MedHelp, the world's largest online health community.

We keep you informed with Progress Notes, and the Legislative Review. MSMA also offers you free CME credits at this meeting every year and we accredit 29 organizations to offer CME.

Direct benefits of your MSMA membership include member discount with Epocrates, a mobile and web-based clinical tool; partnering with Moneta, an outstanding financial services firm; and with the Resolve Physician Agency, which offers a wide range of career services, including job placement, contract review and negotiation.

Other partners include CCPA Purchasing Partners, giving you access to up-front discounts on a variety of medical and office supplies; DocbookMD, offering you a secure, HIPAA-compliant tool to send messages to your MSMA colleagues through an app on your smart phone;

TSYS, one of the largest and most respected payment services companies that offers you an MSMA discount on a wide range of payment acceptance products to help you get paid.

And our newest partner, Medical Waste Services, offers MSMA members significant savings on medical and biohazard waste removal and treatment services.

Other great offers include the Missouri Drug Card, PQRS Registry services, collection services, and many more, all with special rates and savings for MSMA members.

If put to good use, MSMA membership saves you far more than the price of its dues. It is a great investment.

Your Missouri Medical Political Action Committee is one of the most respected and effective PACs in the state. Your participation is essential to our political effectiveness.

I want to take a moment of personal agenda about our support of the PAC and about membership.

Something I have come to understand better from my year in this office is that politicians, who make decisions about healthcare matters routinely, need money to conduct campaigns, and they remember those who support them. I cannot emphasize that enough. I would like to personally ask every member to become a regular supporter of our MMPAC at a $300 or higher level. Compared to the trial attorneys and other interest groups, our support is meager and the stakes are high. Physicians have the means to do this and it is another great investment. Please donate routinely and generously.

Inevitably, most of the people at our meetings are already engaged in our causes and interests. We know why we are here, but a lot of our colleagues do not. In that spirit, I also want to ask everyone in attendance to reach out to peers who are not members, one to one, and explain the benefits of membership, what we do here and why you belong. We need members to keep the organization vital and to infuse new ideas and energy.

Our other partners include your Missouri Physicians Health Program, which served 240 physicians last year who are dealing with chemical, emotional, or behavioral issues.

Your MSMA Insurance Agency was formed by MSMA and is directed by physicians to serve you and your practice. The agency offers all lines of insurance, and provides some financial support for MSMA.

The MSMA Alliance is made up of dedicated and enthusiastic physician spouses who work tirelessly to promote health education and support health-related charitable activities, all toward improving the health and welfare of all Missourians.



Physicians in MSMA's House of Delegates focus on reports and resolutions.



Camaraderie is a big part of Convention. From left, Drs. David Redfern, Bob Gibbons, David Barbe, Albert Ozbahr, Bill Huffaker, and Norman Knowlton.

The Center for Patient Safety is a private, not-for-profit organization formed by jointly by MSMA, the Missouri Hospital Association, and Primaris.

It is dedicated to being the Missouri leader in providing solutions and resources to reduce medical errors and improve patient safety.

Finally, please allow me to thank you, the physicians of Missouri, for the opportunity to serve you in this outstanding organization. We live in changing times with new challenges and opportunities around every corner. It is as a group that we are best able to manage those challenges and opportunities.

It has been my distinct pleasure to have served as president this past year. It is an honor I will always remember and cherish. Thank you very much for your support.

MM

Presidential Inauguration Speech: The Evolution of Medicine

by John O. Stanley, MD
2015-2016 MSMA President

It is with a sense of gratitude and great pride that I am speaking to you tonight as your new MSMA president. I must say that, when I moved back to KC in 1987 & Dr. Carl Myers encouraged me to get involved with MSMA, I never dreamed that I'd be standing here tonight. Thanks, Carl!

I'd like to introduce my wife Kath. Kath works at Eastgate and Antioch Middle Schools as a choir accompanist, and is the mother of my five children. She has been the shining light in my life, and has encouraged and supported me throughout my career.

I also want to honor my mother, Mary Bernadine Stanley. Mom is 91 years old and is the mother of ten children. She and my father, Dr. Charles Stanley, who passed away in 2000, inspired me to become a physician. My dad was a true family doctor. Growing up watching him care for patients in the medical office he maintained in our family home, and accompanying him on many house calls, gave me a framework to follow in my life and profession.



Newly installed MSMA President John O. Stanley, MD, (left), grins as he holds the sacred skull gavel from outgoing President Jeffrey Copeland, MD, that is passed from president to president.

Two of my children are here with us tonight. Ken is a recent Mizzou grad, and is a working artist. Luke will be attending UMKC this fall and plans to major in computer science. With us in spirit are our other kids, including our oldest son, John, who is in law school at the University of Southern California. Also at USC is our son Tom, who is an economics major. Our daughter Suzanne is an actress and singer in Washington, DC. She was also unable to make the trip because she's in a play that is opening this weekend.

I'd like to thank Father Matthew for serving as my spiritual advisor, and John Winkels for providing us with the delightful music. Father Matthew and John have both been supportive and inspiring friends to me and to my family for years. Thanks to MSMA staff for your invaluable assistance in organizing this event, and for your patience with me and my tendency to procrastinate.

Congratulations to our 50-year pin recipients. Thanks for remaining active in medicine and for continuing your involvement with MSMA. You veterans can certainly attest to the incredible changes in medicine over the past few decades — sometimes it feels like we're living through the medical version of the Industrial Revolution. It saddens me that some physicians are feeling so burdened by the demands of today's medical careers that they are choosing early retirement. I believe it is much better for us to remain active and vigilant, so we can help shape the evolution of modern medicine to improve medical care for all people, whether rich or poor or somewhere in between.

With so many issues facing physicians, I could pick dozens of topics to cover. You won't be surprised to hear that the first is electronic medical records, or EMR. When the idea of EMR was introduced, I was excited about the prospect of quick and easy access to my patients' records and believed that EMR could lead to a reduction in duplication of services, fewer errors, and more efficient delivery of care. I believed that the needs of the typical medical practice would drive the development of EMR. Instead, the reverse has turned out to be true. What's more, in addition to cumbersome, annoying computer programs that are focused on coding and regulatory requirements, doctors are frustrated by meaningful use requirements that are impractical and impossible to achieve.

A recent opinion piece in the *New York Times* titled "Why Health Care Tech is Still So Bad" put the situation in perspective for me. The author, Robert Wachter, says he saw an ad aimed at recruiting physicians to come to work for an area hospital. Of all the stated attributes of the job, the only one in bold type was "NO EMR." Doesn't this speak well to

the frustration that physicians are experiencing? That in this tech-savvy world, an employer would use "No EMR" as a selling point says a lot about how bad things have gotten. The author continues, and I quote:

"A friend of mine, a physician in his 60s, described a visit to his primary care doctor. 'I had seen him a few years ago, and I liked him,' he told me. 'But this time was different. A computer had entered the exam room. He asks me a question, and as soon as I begin to answer, his head is down in his laptop. Tap-tap-tap-tap-tap. He looks up at me to ask another question. As soon as I speak, again it's tap-tap-tap-tap.'

'What did you do?' I asked.

'I found another doctor.'"

Despite problems such as these, evidence shows that patient care is better and safer with computers than without them. Some improvement will come with refinement of software, and physicians and students will, with training and experience, learn how to focus on their patients despite the demands of the computer. The *Times* piece wraps up when the author interviews IBM's Watson Team, the people who built the computer made famous during its competition with the champions of the TV game show Jeopardy. He asks the Watson Team's lead engineer what the equivalent of the Jeopardy Victory would be for medical computing. He responded, "It'll be when we have a technology that physicians suddenly can't live without." I believe that some of our young, tech-savvy physicians will lead the charge in improving EMR and getting us to that point, and they will receive invaluable assistance from organized medicine. Thought I am neither young nor tech-savvy, I plan to communicate with the AMA's EMR task force to track their efforts to improve EMR's operability, and assist them in any way I can. This situation will get better.

My second talking point concerns my belief that team-based care is an important improvement upon the more compartmentalized and fragmented health care delivery systems of the past, and that physicians need to keep their place at the top of the team. We've all heard that physician and nurse shortages are coming, and good solutions, such as increasing the number of residency slots, offering loan forgiveness programs and improving reimbursements, are being considered to prevent such shortages. But these are long-term solutions, and I am concerned that medicine seems to be moving toward some quick-fix short-term solutions that could have long-term consequences for physicians. Specifically, I am opposed to allowing nurse practitioners to practice independently, pharmacists to manage chronic diseases in patients, psychologists to prescribe medications, optometrists to perform eye surgery, and the list could go on. Physicians bring the highest level of education, training and experience to the health care team, and we are well-suited to guide the other team members, while allowing them to work up to their level of training and education. Using a logical, efficient work flow, team members can work together, sharing decisions and information for the benefit of the patient, while drawing on the strengths of each team member. Allowing non-physicians to increase the scope of their practices without being part of the health-care team will lead to further fragmentation of care.

Thirdly, we need to work together to protect the physician/patient relationship. One of the most enduring privileges we have enjoyed in medicine is the trust our patients have placed in us. The ability of physicians to have open, frank and confidential communication with patients has always been a fundamental element of a highly functioning healthcare system. Recently, there has been some very worrisome legislation introduced that is trying to place limits on the information exchanged between physicians and their patients. We are seeing restrictions on conversations about firearms, sexual orientation, end-of-life care, and other issues. This legislative interference into the practice of medicine infringes on the physician's first amendment right to free speech, and it also places the physician at risk for disciplinary or criminal prosecution. We physicians should not be subject to criminal prosecution for clinical decisions made based on professional judgement, and we should be free to have open and honest communication with patients about all aspects of health and safety. We should be able to gather any information that can impact the health of our patient or their family members. This issue is not about guns or gay rights or death panels, but about legislation that encroaches upon the patient-physician relationship. We must not politicize medical care.

As your president, I will work hard to oppose legislation that tries to weaken the patient-physician relationship. I will support efforts to strengthen the formation of team-based care models that use physicians as leaders. I will assist in efforts to improve EMR's operability. And there are many more issues that face us that I have an interest in, and an opinion about. If you want to know more, chat with me during the reception. Or find me at the next MSMA meeting. I am eager to hear from each and every one of you.

Thank you once again for being here, and for supporting MSMA. It is up to us as physicians to do everything we can to help shape the evolution of medicine in ways that will not only help us to be the best physicians that we can be, but also to improve the health and well-being of our patients. That means we need to make our voices heard, and we need to encourage our colleagues to do the same. Please let your voice sound out to those who are not involved. You might be recruiting a future MSMA president. After all, where would I be without a push from Dr. Carl Myers?

Thank you. **MM**

Recipients of the 50-Year Physician Pin

Thirty-six career physicians earned their 50-Year Physician Pin during the MSMA Presidential Inauguration from MSMA President Jeffrey Copeland, MD. After the Installation, many celebrated at the reception. Below is the listing of all pin recipients.



Attending 50-Year Physician Pin recipients include, from left: Drs. President Jeffrey Copeland, presiding, Kulangara Zacharias, Anthony Thomas, Barbara Buchanan, Robert Pavlu, Francis Corry, and George Bohigian.

- Nancy L. Abdou, MD, Overland Park, KS
- Melvin N. Abend, MD, Kansas City, MO
- Jorge M. Alegre, MD, Chesterfield, MO
- Charles W. Barbee, MD, Columbia, MO
- Everett A. Beguin, Jr, MD, Springfield, MO
- Charles R. Blackwell, MD, San Antonio, TX
- George M. Bohigian, MD, St. Louis, MO
- Barbara N. Buchanan, MD, Kansas City, MO
- Harry O. Cole, MD, Chesterfield, MO
- Francis M. Corry, MD, Springfield, MO
- Juan C. Corvalan, MD, St. Louis, MO
- Stephen R. Crespin, MD, St. Louis, MO
- Carl F. Ehrlich, MD, St. Louis, MO
- Andrew E. Galakatos, MD, St. Louis, MO
- Robert L. Grubb, Jr, MD, St. Louis, MO
- Gary Kulak, MD, St. Louis, MO
- Edilberto B. Lorenzo, MD, Bolivar, MO
- James P. McGonigle, MD, Longboat Key, FL
- Richard D. McLaughlin, MD, Rogersville, MO
- Carl N. Mentgen, MD, Springfield, MO
- Wayne W. Meyer, MD, Creve Coeur, MO
- Thomas M. Moran, MD, St. Louis, MO
- J. Gail Neely, MD, St. Louis, MO
- S. Michael Orgel, MD, Chesterfield, MO



Right, outgoing Alliance President Kathy Weigand presents Sue Ann Greco, newly installed President, with her 2015-2016 pin.

- William D. Owens, MD, St. Louis, MO
- Jose M. Pacheco, MD, Springfield, MO
- Robert R. Pavlu, MD, Carrollton, MO
- Arteso C. Raborar, MD, Springfield, MO
- Thomas F. Reardon, MD, Kirkwood, MO
- H. Bryan Rogers, MD, Chesterfield, MO
- Gilbert Ross, MD, Columbia, MO
- Thomas P. Sweeney, MD, Springfield, MO
- F. Anthony Thomas, MD, Kansas City, MO
- Benesto F. Tumanut, MD, Kansas City, MO
- Richard B. Whiting, MD, Chesterfield, MO
- Kulangara P. Zacharias, MD, Columbia, MO

MM

House of Delegates Votes on Resolutions

Resolution #1 – Any Willing Provider in Federal Exchange Plans

Adopted amended Resolution #1- Resolved, MSMA support a requirement that any health care plan sold in Missouri through the federal exchange must allow any willing physician to participate in that plan.

Resolution #2 – Creation of "Medical Student" Category in Federal Direct Student Loan Program

Adopted amended Resolution #2 – Resolved, that the MSMA encourage the AMA to study the true rate of default in federal student loans among medical student borrowers, and be it further

Resolved, that the MSMA encourage the AMA to advocate for the creation of a separate "Medical Student" category in the Federal Direct Student Loan Program, such that interest rates on loans to medical students can be properly risk-adjusted.

Resolution #3 – Patient-Physician Continuity upon Health Plan Termination

Substitute Resolution #3 adopted – Resolved, that the Missouri State Medical Association support extension of the continuity of care window to nine (9) months or the end of the next enrollment period, whichever comes later, after patient and physician notification of the health plan's termination of the physician contract.

Resolution #4 – Opposing the Interstate Medical Licensure Compact

Referred Resolution to the MSMA Council - Resolved, that the Missouri State Medical Association strongly opposes the Federation of State Medical Board's Interstate Medical Licensure Compact; and further be it

Resolved, that the Missouri State Medical Association requests that our American Medical Association likewise oppose the Interstate Medical Licensure Compact.

Resolution #5 – Truth in Advertising

Referred to MSMA Council for study and action - Resolved, that the Missouri State Medical Association (MSMA) work to have Missouri adopt Truth in Advertising legislation for all practitioners who provide health care in Missouri, and further be it

Resolved, that Trust in Advertising legislation require that any advertisement or solicitation for health care services which promotes a health care practitioner or health care company or entity (1) must identify the type of Missouri professional license or certificate held either by the advertising practitioner or the practitioner(s) providing health care under the advertising or the health care company, and (2) that such advertising or solicitation be free of any and all deceptive or misleading information, and further be it

Resolved, that when Truth in Advertising legislation applies to medical physicians, an allopathic or osteopathic physician may claim in any medium (print media, electronic media, or verbal communication) to be "board certified" only if the specialty board is (1) a specialty board recognized by the American Board of Medical Specialties or the American Osteopathic Association, or (2) a specialty board which is recognized and sanctioned by a Missouri licensing authority which issues a license to practice allopathic or osteopathic medicine in this State, and further be it

Resolved, that an allopathic or osteopathic physician of medicine may present him/herself as having mastered additional post graduate training only if that training (1) has been received from a specialty board which is a member board of the American Board of Medical Specialties (ABMS) or the American Osteopathic Association (AOA) or (2) required successful completion of a postgraduate training program approved by the Accreditation Commission for Graduate Medical Education (ACGME) or by the AOA.

Resolution #6 – Qualifications for Usage of the Term "Board Certified" in Physician Marketing

Referred to MSMA Council for study and action - Resolved, that The Missouri State Medical Association (MSMA) seek legislation whereby the Missouri Board of Registration for the Healing Arts may refuse to issue, or may suspend or revoke any license or permit, or impose probationary or other restrictions on any license or permit issued under its jurisdiction for the following causes:

Holding oneself out to the public in any manner as being certified by a public or private board including but not limited to a multidisciplinary board or "board

certified", unless all of the following criteria are satisfied:

(a) The full name of the certifying board from which the physician is certified and the full name of the specialty or subspecialty is included in any advertisement, promotion, marketing material, and practice products.

(b) The certifying board meets any of the following qualifications:

(i) The certifying board is recognized by the American Board of Medical Specialties or the American Osteopathic Association.

(ii) The certifying board has been approved by the Missouri Board of Registration for the Healing Arts.

(iii) A board requiring an Accreditation Council for Graduate Medical Education or American Osteopathic Association approved postgraduate training program that provides complete training in that specialty or subspecialty, and be further

Resolved, that The Missouri State Medical Association (MSMA) seek to legislation to empower the Missouri Board of Registration for the Healing Arts; to provide detailed directives of the advertisement requirements and restrictions to be used by physicians; to provide for causes for which the board may refuse to issue, or may suspend or revoke, any license or permit, or impose probationary or other restrictions on the license of a physician.

Resolution #7 – Flexibility in Scheduling Pre-Authorized Events

Referred to MSMA Council - Resolved, that the Missouri State Medical Association (MSMA) seeks, through appropriate channels, to adopt a policy whereby the pre-authorization of a point of care event, at a particular facility, is good for a minimum span of twenty-eight (28) days in order to provide flexibility in scheduling that physicians need to accommodate their patients' schedules and needs.

Resolution #8 – Reduced Payments for Subsequent Services with the Global Period

Referred to MSMA Council - Resolved, that the Missouri State Medical Association (MSMA) oppose the medical insurance company practice of reduced procedural fees for indicated, necessary, and appropriate medical services performed by physicians during the global period.

Resolution # 9 – Accurate and Update Listing(s) of Participating Physicians in Networks

Adopted - Resolved, that the Missouri State Medical Association (MSMA) work with regulating agencies to have Missouri insurance companies maintain accurate and up-to-date listings each month of participating physicians by specialty within their network(s).

Resolution #10 – Reclassification of Medications

Adopted amended substitute Resolution #10 – Resolved, that MSMA educate physicians and study the compliance of pharmacies regarding the federal and state regulations for emergency telephone prescriptions for Schedule II controlled substances.

Resolution #11 – Preparation of Inpatients for Discharge

Referred to MSMA Council - Resolved, the MSMA and AMA pursue legislation and regulation at the State and federal levels that assures the following:

At discharge, the patient's regimen will be appropriately adjusted by the discharging physician, in collaboration with pharmacists, social workers, and those familiar with any formularies that impact the patient's access to necessary medications, and

The patient's physician providing ongoing care and the patient's pharmacy of record will be informed of changes in the patient's drug regimen, including deleted medications and changes to dose, frequency, route, duration, and other critical matters.

Resolution #12 – Missouri Medicaid Application during Pregnancy

Amended Substitute Resolution adopted – Resolved, the MSMA pursue remedies of delayed processing of Medicaid eligibility applications during pregnancy, and be it further

Resolved, the MSMA and MO HealthNet continue discussions regarding faster application approvals for women with high risk pregnancies, and be it further

Resolved, the MSMA support its members on provisional Medicaid eligibility for their patients.

Resolution #13 – Missouri Legislature declare Missouri a "Start by Believing" state to encourage victims of sexual assault to report incidents

Referred to MSMA Council - Resolved, the physicians of Missouri should support the "Start by Believing" campaign, and be it further

Resolved, that the Missouri State Medical Association send a message to the legislature that Missouri become a "Start by Believing" State, thus proclaiming that we will "start by believing victims of sexual assault."

Resolution #14 – Member Participation in MSMA Governance

Adopted - Resolved, that the MSMA Council study and discuss the current structure, meeting length, and meeting frequency of the Council and the House of Delegates to determine if any changes might encourage more members to participate.

Resolution #15 – Increasing Consumer Awareness through Front-of-Package Labeling Systems

Adopted Substitute Resolution #15 – Resolved, the MSMA and AMA encourage evidence-based, standardized labeling systems that will provide consumers with easily accessible, unbiased nutritional facts and promote sustainable healthier eating patterns

Resolution #16 – Pricing of Generic Drugs

Adopted – Resolved, that the Missouri State Medical Association understand the market and regulatory changes that affect generic pricing in order to determine an advocacy position for our patients. One part of that advocacy will be to educate our legislators at the state and national level concerning the significant impact that the massive increase in the prices of generic drugs is having on the health of our patients, and be it further

Resolved, that we request that our AMA delegates pursue a similar resolution by the AMA. **MM**



Awards: Legislative

Each year MSMA recognizes a legislator or two who has demonstrated unusual support for our profession and our patients. Over the years we have applauded some truly outstanding individuals. And this year is no exception. This yea MSMA honored Representative Eric Burlison.

Representative Eric Burlison represents the 133rd House district, which is located in Greene County and includes portions of the City of Springfield. He was elected to the House of Representatives in November 2008, and quickly earned the respect and admiration of his colleagues on both sides of the aisle.

For the past three years, Representative Burlison has served as Chairman of the important House Committee on Professional Registration and Licensing. In this position, he controls legislation which addresses scope-of-practice and the relationships between physicians and other health care professionals. The legislation in his committee significantly impacts physicians and the practice of medicine.

Representative Burlison has come to medicine's aid countless times during his service in the General Assembly. For the past three years, he has been the House sponsor of our commonsense tort reform measure, which seeks to restore the noneconomic damage cap in medical malpractice lawsuits.

Equally as important, he is a consistent protector of the practice of medicine when other health care professionals attempt to expand their scope of practice. He has been a tireless advocate for the physician-led healthcare team.

This year, Representative Burlison also sponsored HB 422, an MSMA-backed bill that reverses a Supreme Court decision that prohibits the Board of Healing Arts from answering general inquiries from physician licensees. He has also supported MSMA efforts to eliminate the utilization of Maintenance of Licensure in Missouri.



Left, Representative Eric Burlison receives MSMA's Legislative Award from President Jeffrey Copeland, MD.

Representative Burlison regularly seeks the advice of MSMA on important healthcare issues at the Capitol, and shares that information with his colleagues and the members of his committee.

Whether it is big issues, like tort reform and scope of practice, or the less visible ones, like direct primary care and public health issues, Representative Burlison has been a terrific supporter of Missouri physicians and their patients.

Awards: Arthur Gale Freedom of Expression



Left, Charles Van Way, MD, receives the Arthur Gale Freedom of Expression Award from President John Stanley, MD.

The Arthur Gale Freedom of Expression Award is awarded annually to the author of the best commentary article published in *Missouri Medicine*, in honor of Arthur Gale, MD, one of the Journal's Contributing Editors and MSMA member since 1976.

This prestigious and monetary award is offered to encourage MSMA physicians to submit personal perspective essays on issues that are topical and provocative.

The 2014 recipient of this award is Dr. Charles Van Way.

His article, "Secondary Gain, Gone with the Wind & the SGR" was published in the May/June 2014 issue.

Dr. Van Way, a trauma surgeon from Kansas City, is a frequent contributor to *Missouri Medicine*, and is also the Editor of *Kansas City Medicine*.

MM

Sponsors & Exhibit Partners

MSMA thanks the following Sponsors and Exhibit Partners who supported the Annual Convention through educational grants.

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- Missouri Drug Card
- Missouri Health Connection
- Missouri State Medical Foundation
- MGMA Missouri
- MoDocs
- Moneta Group
- MPM-PPIA
- MSMA Health Education Foundation
- MSMA Insurance Agency
- Norcal Mutual Insurance Company
- PDS Cortex
- ProAssurance
- RiverMend Health
- Teva Pharmaceuticals
- U.S. Army Health Care
- U.S. Navy Medical Programs

Credentials & Appointments

The 157th Annual Convention of the Missouri State Medical Association was held at the Westin Crown Center, April 17-19, 2015. David Chalk, MD, Washington, Missouri, presided as Speaker of the House of Delegates. Parliamentarian was Jo-Ellyn M. Ryall, MD, St. Louis.

The Committee on Credentials announced there were 10 Officers, 21 Councilors, and 60 Delegates in attendance for the Opening Session of the House of Delegates.

This report and the minutes of the 156th Annual Convention as published in the May/June 2014 issue of *Missouri Medicine* were approved.

At the Second Session of the MSMA House of Delegates, the Committee on Credentials reported there were 8 Officers, 19 Councilors, and 91 Delegates in attendance.

Reference Committee A members were Michael O'Dell, MD, Kansas City, Chair; Bridget Early, MD, Columbia; Sarah Florio, MD, Lee's Summit; Andy Wright, MD, Springfield; and Mr. Avik Som, St. Louis. Reference Committee B members were Michael J. Stadnyk, MD, Chesterfield, Chair; Jeff Glaser, MD, Lake Saint Louis; David Butler, MD, Chesterfield; William Reynolds, MD, Springfield; and Brad Harr, DO, Fairview, IL.

The MSMA Nominating Committee members were: 1st District - Robert Corder, MD, St. Joseph; 2nd District - John Memken, MD, Hannibal; 3rd District - Edmond Cabbabe, MD, St. Louis; 4th District - David Chalk, MD, Washington; 5th District - Lisa Thomas, MD, Columbia; 6th District - David Kuhlmann, MD, Sedalia; 7th District -Marc Taormina, MD, Lee's Summit; 8th District - Ellen Nichols, MD, Joplin; 9th District - David Barbe, MD, Mountain Grove; Organized Medical Staff Section & Chair - James Conant, MD, St. Joseph; Young Physician Section - Sarah Florio, MD, Lee's Summit; and Medical Student Section - Mr. Kavon Javaherian, St. Louis. **MM**



Members of Reference Committee A, from left to right: Sarah Florio, MD, Andy Wright, MD, Avik Som, Bridget Early, MD, and seated, Michael O'Dell, MD, Chair.

Summary of Council Actions: 2014-2015

Meeting of April 6, 2014 - St. Louis

Jeffrey Copeland, MD, St. Louis, President, presided. John O. Stanley, MD, Kansas City, was elected President Elect. Ravi Johar, MD, St. Louis, was elected Chair. Warren Lovinger, MD, Nevada, was elected Vice Chair. David Redfern, MD, Springfield, was reelected Secretary. George Hruza, MD, St. Louis, was reelected Treasurer.

Meeting of July 13, 2014 - Jefferson City

At its meeting in July, your MSMA Council approved several efforts to support Missouri physicians and their patients. Among them are continued appeals to state and federal officials regarding UnitedHealthcare's physician terminations, and creation of a new physician registry to improve access to care for our military veterans.

Your Association continues to receive calls regarding UHC's termination notices dismissing physicians as providers for Medicare Advantage programs. The issue has been discussed with the Missouri Attorney General and the Missouri Department of Insurance. A letter of appeal was also sent to theCMS Regional Administrator. It is estimated that 900-1,000 Missouri physicians will eventually receive termination notices from UHC. Visit www.msma.org/UnitedHealthcareTerminations.

MSMA is creating a registry of physicians who are willing to provide care to military veterans in the wake of problems with the Veterans Administration health care system. Visit www.msma.org/VeteransAffairsRegistry.

To improve its legislative efforts, MSMA is enhancing its website to make it easier and more effective for members to contact their elected officials about key legislative issues.

MSMA is also instituting a Political SWAT Team for physicians and spouses to sign up to provide feedback on candidates in their areas. When the General Assembly is in session, the "Team" may receive emails calling for immediate action on certain issues.

In May a number of physicians became victims of a Federal income tax scam. Fraudulent tax returns have been filed using physicians' social security numbers. The Secret Service, FBI and IRS are working to determine where the social security numbers were obtained and to put a stop to the scam. MSMA urges all members and their colleagues who have been affected by the scam to visit www.msma.org/mx/PracticeManagementUpdates.

In other Council activities, MSMA President, Jeff Copeland, MD, reported his attendance at the annual meetings of Iowa and Texas, the AMA, and participation in the meeting of the Organization of State Medical Association Presidents.

Advocacy

MSMA had a good year at the Missouri General Assembly. The 2014 Legislative Review has been mailed to all MSMA members.

Federal issues, including the SGR, and the results of the 2014 legislative session, including tort reform, APRN scope expansion, assistant physician licensure, and Medicaid reform were discussed. More research was directed for the Epipen bill and WellPoint's use of oncology pathways.

The following resolutions were referred to the Legislative Committee from the 2014 Annual Convention:

Resolution 3 – Birthing Centers

Action: Carry Out Directives

This resolution directed MSMA to support changing the current Missouri law to require a free-standing birthing center to have a transfer agreement with a hospital close enough to satisfy ACOG's guideline of being able to perform a C-section within 30 minutes, and require the physician in a collaborative agreement with a birthing center to have C-section privileges at the hospital with which they have a transfer agreement.

Resolution 6 - Professional Liability Insurance

Action: Not Adopted

The resolution directed MSMA to work to enact legislation that instructs the Missouri Division of Professional Registration to require all individuals involved in the diagnosis and/or treatment of patients to be licensed by the appropriate Missouri state licensing board and have appropriate malpractice insurance.

Resolution 8 – Rendering Opinion in Tort Actions against Physicians

Action: Not Adopted

The resolution called for MSMA to support legislation to define legally qualified health care provider in tort actions against physicians as a physician licensed in this state or any other state, and either actively practicing or within five years of retirement from actively practicing substantially the same specialty as the defendant. This is already the law in Missouri.

Resolution 10 – Prescribing Cranial Electrotherapy Stimulation

Action: Carry Out Directives

The resolution directed MSMA to work on legislation to limit the prescription of an electrical stimulation to the brain, such as Cranial Electrotherapy Stimulation, to licensed MDs, DOs, Dentists, and Veterinarians and physician extenders. After the prescription is written and approved by the MD, DO, dentist, veterinarian or physician extenders, the administration of the device can be done by counselors, psychologists, and patients in their own homes.



Members of Reference Committee B, from left to right: David Butler, MD, Jeff Glaser, MD, Brad Harr, DO, William Reynolds, MD, and seated, Michael Stadnyk, MD, Chair.

Resolution 16 – Missouri Scholarship Support for Missouri Students Entering Shortage Areas

Action: Carry Out Directives

This resolution directed MSMA to support legislation that expands funding of medical scholarship and loan repayment for medical students, residents, and physicians entering health profession shortage areas in Missouri and increasing Missouri state funding for medical scholarships and loan repayment programs. Other medical and specialty organizations were also asked to support this legislation.

Resolution 17 – Opposition to the Criminalization of the Practice of Medicine

Action: Substitute Adopted

This resolution directed MSMA to oppose the criminalization of mistakes made by physicians in medical records and operative notes in the absence of any proven pattern of billing fraud, and to forward it to the AMA.

Public Affairs

A resolution from the 2014 Annual Convention directed MSMA to encourage businesses and pharmacies that also sell tobacco products to follow the lead of CVS pharmacy by eliminating tobacco sales in their places of business. The objective is to send a clear message that those who promote the goal of better health should recognize that selling tobacco products contradicts that commitment. Public Affairs Commission Chair Jim Blaine, MD, penned an editorial for the magazine of the Missouri Pharmacy Association, and also for Missouri Medicine. Media outlets will also be alerted.

MSMA became a sponsor of the "Dispensary of Hope," a Nashville, TN, based service that collects unexpired medical samples so they can be dispensed to nearly 80 community health centers and charitable pharmacies in 15 states. A free service, donor practices place the drugs in a secured box provided by the service, which covers shipping costs. The box is sorted, contents are logged, and donors receive a receipt with information necessary for recordkeeping and regulatory compliance. You can sign up at http://dispensaryofhope.org/give-meds/physicians/form.

CME

Raghav Govindarajan, MD, has been appointed to the Commission on CME for a three-year term.

The Commission reviewed the evaluations from the 2014 Annual Convention, and recommended two general sessions on Friday and three on Saturday during the 2015 meeting in Kansas City.

Your Association was recently awarded a four-year accreditation from the ACCME. MSMA granted the following reaccreditations: Children's Mercy Hospital, Mercy Hospital Joplin, Boone Hospital Center, and Center for Behavioral Medicine received six years accreditation with commendation. Mercy Hospital Washington received four years accreditation. Staff completed major online CME handbook revisions based on ACCME updates.

Alliance

The Alliance project "Move across Missouri" began on July 1 and will end on March 1, 2015. The Alliance is working on fundraisers, membership, and advocacy. Several Alliance members attended the AMA Alliance Meeting in

June. The Alliance Fall Conference will be held October 21-22 in St. Joseph.

AMA

At the recent AMA meeting, your Missouri Delegation discussed quicker care for veterans, and adopted a policy urging Congress to fix the problems, and allow veterans access to health care outside the VA system.

The AMA also considered the lack of residency positions for recent graduates and a growing pool of young physicians who cannot continue their training. The AMA House agreed for action, but no alternative methods of paying for additional residency positions were offered. The AMA passed a resolution in opposition to all attempts to provide alternate pathways for those graduates unable to find residency slots. However, the new Missouri Assistant Physician law will allow recent medical school graduates to serve temporarily as assistant physicians under the guidance of mentors in private practice.

Other topics included maintenance of certification, SGR, ICD-10 and problems related to EHRs. The AMA House adopted a set of principles or guidelines for telemedicine services in order to receive adequate reimbursement from payers.

Councilor Districts [Selected]

The St. Louis Metropolitan Medical Society will sponsor a workshop on "Doctor's Guide to Finance" on July 31. A large percentage of certain specialties in St. Louis had their contracts rescinded by UnitedHealthcare. The St. Charles-Lincoln County Medical Society will present a $5,000 award to a medical student in December. District #6 announced that Bothwell Medical Center has formed an alliance with Capitol Region Medical Center and University of Missouri. New members will be representing District #7 on the Council: Betty Drees, MD, Councilor; Marc Taormina, MD, Vice Councilor; James DiRenna, MD, from Vice Councilor to Councilor.

Reports

Reports were heard from the MSMA Insurance Agency, Membership Committee, Physicians Health Program, OMSS, Resident Fellow Section, and Medical Student Section.

Meeting of October 19, 2014 - Jefferson City

At its October meeting in Jefferson City, the MSMA Council approved a date an important physician rally in the state Capitol. Physicians from all over the state will join forces with the ShowMe Tort Reform Coalition to pursue a new cap on non-economic damages in the 2015 General Assembly. Plan to join us at the Capitol for our White Coat Day on Tuesday, February 24, 2015.

In other Advocacy matters, the Council heard an update on recent scope of practice activities, and the upcoming Assistant Physician rules being drafted by the Board of Healing Arts. Information on the 2015 Prescription Drug Monitoring Program initiative was also shared.

MSMA and the Missouri Hospital Association sent joint correspondence to the Centers for Medicare & Medicaid Services regarding the United Healthcare physician terminations.

Due to changes implemented by CMS, Primaris will convert from a not-for-profit to a for-profit entity.

In response to an AMA Resolution regarding the problems in the VA health system, the MSMA created a registry of physicians in the state that are willing to care for VA patients outside the VA system. Currently, the registry contains more than 150 names. Sign up at www.msma.org/VeteransAffairsRegistry.

Medical Economics

Two resolutions referred to the Commission on Medical Economics from the 2014 Annual Convention covered Maintenance of Licensure and Maintenance of Certification. The Commission issued a report to the Council and the Council referred the matter to the Committee on Legislative Affairs for further research.

Membership

The Membership Committee distributed letters to Council for members who have not yet renewed, requesting Councilors to personally sign the letters and encourage their colleagues to pay their dues. Also, MSMA members will soon enjoy discounts with a new member benefit with Medical Waste Services. Further announcements will be made in Progress Notes and on the website.

MSMA Insurance Agency

The Agency recently hired two new employees, and will soon offer dental and vision insurance.

Physicians Health Program

Charles Sincox, MD, updated the Council on the activities of the Missouri Physicians Health Program. Representatives from the program continually make presentations to various groups asking for support and donations.

CME Commission

The Council approved the following reaccreditations: North Kansas City Hospital; Kansas City of Ophthalmology

& Otolaryngology; Cape Girardeau County Area Medical Society; Greene County Medical Society; and Center for Behavioral Medicine. Audrain Medical Center will relinquish its accreditation at the end of 2014 as it is now a part of SSM Healthcare and will jointly sponsor activities with St. Mary's Medical Center in Jefferson City. Liberty Hospital, Liberty, will relinquish its accreditation this month.

Appointments/Nominations

The Council voted to endorse David Barbe, MD, for AMA President Elect in 2016. The Council also endorsed Edmond Cabbabe, MD, for a nomination to the AMA Council on Long Range Planning and Development. Jerry Kennett, MD, was reappointed to the Primaris Board.

Councilor District Reports (Selected)

Amendment 9, which passed in the August Primary Election, will protect all types of electronic communications. A warrant will have to be obtained to get access to anyone's electronic data. AMA President, Robert Wah, MD, made a presentation in St. Louis on health care reform. The St. Louis Medical Society will present a five-part CME program on health care business practices in February to assist physicians in running their practices. The St. Charles-Lincoln County Medical Society will make a $5,000 donation to a deserving medical student in December.

Alliance

Sue Ann Greco, Alliance President-Elect, stated Alliance members would participate in the White Coat Day on February 24. She reminded the Council to consider participating in the Holiday Sharing Card fundraiser. The theme for the Alliance Fundraiser held during the MSMA Annual Convention will be a casino night.

Meeting of January 18, 2015 - Jefferson City

The MSMA Council met in Jefferson City over the weekend of January 17-18. Among other activities, MSMA conducted an Advocacy Workshop that trained 30-plus physicians on grassroots lobbying and communication. Presenters included experts from the AMA's Political Education Programs department, and four physician legislators currently serving in the Missouri General Assembly.

In other advocacy efforts, physicians can support their profession by signing up for the Physician of the Day program, and Council members were encouraged to do so. The Council also approved the 2015 Legislative Award, which will be presented to Representative Eric Burlison.

Drs. Jeff Copeland, John Stanley and David Barbe will represent MSMA at the AMA Advocacy Conference in Washington D. C. this month.

The Council approved two 2014 MSMA House of Delegates resolutions that were referred to Council. They are #18-Opposition to Mandatory Maintenance of Certification and #19-Opposition to Maintenance of Licensure.

Dr. Copeland reported he has traveled around the state to discuss issues with physicians and participate in the installation ceremonies for several county medical societies.

Annual Convention

Members can earn up to 10.5 hours by attending all six of the MSMA and OMSS General Sessions during the Association's Annual Convention. Topics include Current USPSTF Screening Recommendations, How Emotions Affect the Practice of Medicine, The Positive Aspects of Medicine, Challenging Ethical Issues in Medicine Through Clinical Vignettes, Population Health Management, and To Sign or Not to Sign-Hospital Employment Contracts for Physicians.

MSMA Insurance Agency

The MSMA Insurance Agency is expanding its product line, adding Vision, Dental, and Long-Term Care policies. Please visit www.msma.biz or call 866-626-2467 for more information.

PCPI Update

The Physician Consortium for Performance Improvement (PCPI) program was explained by Alexander Hover, MD, who discussed the PCPI structure, governance and future performance measures; trends in clinical performance measures; clinical registry development; patient engagement in performance, and government program changes.

Alliance

The Alliance will join the MSMA during its White Coat Rally Day event and hold its Winter Board Meeting the following day. The annual Alliance Foundation Fundraiser will be a Casino Night/Dinner to be held Friday, April 17 in conjunction with MSMA's Annual Convention.

Councilor Reports (selected)

The St. Louis Metropolitan Medical Society and Anders Health Care Services will co-sponsor a Physician Leadership Institute to be held on five Saturdays from February through May. Missouri University School of Medicine will soon be using facilities in Springfield for third- and fourth-year medical students. Additional reports were heard by the Missouri Physicians Health Program, Membership, the Publications and Editorial Board Committee, OMSS, YPS, and MSS. **MM**

Reports of the Delegate Handbook: 2014-2015

Secretary

The Missouri State Medical Association had 4,745 members as of the December 2014 audit. This was a net loss of 181 members from our membership of 4,926 as of the December 2013 audit. Following is a breakdown according to classification.

Year	Students	Residents	Active	Honor	Total
2013	993	70	3,379	484	4,926
2014	1,019	56	3,194	476	4,475
	+26	-14	-185	-8	-181

Number of member deaths reported during 2013 totaled 19.

The Committee on Nominations, which is appointed by the President, from the House of Delegates, must submit nominations for the following offices:

President Elect to fill the expired term of John O. Stanley, MD, Kansas City.

Three Vice Presidents to fill the expired terms of David Poggemeier, MD, St. Charles; Robert Zahn, MD, Ozark; Jay L. Meyer, St. Louis.

A Speaker and Vice Speaker to fill the expired terms of David Chalk, MD, Washington, Speaker and Lancer Gates, DO, Kansas City, Vice Speaker. Both are eligible for re-election to their current position.

Three Delegates and Two Alternate Delegates to the AMA to fill the vacancies created by the expiration at the conclusion of the 2015 Annual Convention of the terms of Delegates James Conant, MD, St. Joseph; Rebecca Hierholzer, MD, Leawood, KS; William Huffaker, MD, Chesterfield and Alternate Delegates Warren Lovinger, Jr., MD, Nevada and Mr. Avik Som, St. Louis. The new two year-terms will begin at the conclusion of the 2015 MSMA Annual Convention and end at the conclusion of the 2017 MSMA Annual Convention.

The terms of the following Councilors will expire in 2015: 2nd District – Sandra Ahlum, MD, Hannibal; 3rd District – Ravi Johar, MD, Chesterfield and Robert A. Brennan, MD, St. Louis; 4th District – Kevin Weikart, MD, Lake St. Louis; 6th District – Warren Lovinger, Jr., MD, Nevada; 7th District – Betty Drees, MD, Kansas City; 8th District – Alexander Hover, Springfield; 10th District – Kirby Turner, MD, Poplar Bluff; Organized Medical Staff Section – Peggy Barjenbruch, MD, Mexico; Young Physician Section – Ramona Behshad, MD, Chesterfield; Resident & Fellow Section – Brad Harr, DO, Fairview, IL; Medical Student Section – Mr. Nathan Nolan, Columbia

The terms of the following Vice Councilors will expire in 2015: 2nd District – Bryson McHardy, MD, Hannibal; 4th District – Martin Willman, MD, St. Peters; 6th District – David Kuhlmann, MD, Sedalia; 8th District – M. Ellen Nichols, MD, Joplin; 10th District – Charles Lawson, MD, Poplar Bluff; Organized Medical Staff Section – James Conant, MD, St. Joseph; Young Physician Section – Sarah Florio, MD, Lee's Summit; Resident & Fellow Section – Michael D. Puricelli, MD, Columbia; Medical Student Section – Ms. Josephine Doo, Kansas City.

Delegates shall meet during the Annual Convention to elect the Councilors and Vice-Councilors for their respective districts and sections. The election shall be certified to the House of Delegates on the prescribed form which will be furnished.

The entire session will be held at the Westin Crown Center Hotel, Kansas City, MO. The House of Delegates will hold its First Session on Friday, April 17, 2015, at 8:00 am and the Second Session is on Sunday, April 19, 2015, at 8:15 am.

Treasurer

The report of the Treasurer is covered in the Financial Statement which is published in the March/April issue of *Missouri Medicine.*

Executive Vice President

The report of the Executive Vice President is covered in President's State of the MSMA speech on page 226.

Alliance

On behalf of organized medical Alliance, I have traveled to many counties, and states and participated in many noble causes. Throughout my travels, I have embraced many friends who have become "my shining stars." I wish to thank the membership of the Missouri State Medical Association Alliance for their volunteer and charitable activities to build health communities. This is the mission of the MSMAA and it has been an honor and a privilege to serve as president.

MSMA Alliance members Marsha Conant, Barbara Hover, Stacy Peters, Mary Shuman, Sandra Murdock, Allene Wright, and Sue Ann Greco attended the AMA Alliance Leadership Development Conference and 2014 Annual Meeting in Chicago on June 8-10. The meeting was a chance to network with Alliance members from across

the country while learning effective leadership techniques to put into practice at the State and County levels. The highlight for MSMA Alliance members attending the Annual Meeting was the presentation of the 2014 Legislative Educational and Awareness Promotion (LEAP) Award to the Missouri State Alliance for their participation at the White Coat Rally Day held this past March in Jefferson City.

State activities this year included continuing with last year's health initiative aimed at increasing physical fitness and quality family time called Move Across Missouri (MAM). We encouraged medical families to Move Across Missouri, whether it is biking, hiking, swimming walking, or running; and we encouraged each local Alliance to incorporate the initiative into their health projects and enter either as a group or individually. We will celebrate the results at this Annual Meeting in Kansas City.

Our Fall Conference was held in St. Joseph, hosted by the Buchanan County Medical Alliance., on Oct. 21-22. We "Moved Across Missouri", heard programming on breast cancer awareness, and the Southern Medical Association Alliance's "Almond Workshop," which is a module for medical society Alliances on how to prepare and submit their local projects on Doctors' Day, Medical Heritage, and Health.

Our newly-established Alliance Scholarship grew through fund-raising efforts via the Holiday Sharing Card and the Annual Foundation Fundraiser/Dinner/Casino Night held at this Kansas City meeting.

The MSMAA held their contest Smoking Is Not for Me. Entries were received from all county Alliances and the awards will be made at this upcoming Annual Meeting in Kansas City.

Reporting their good projects from all over the state were organized Alliances of Boone, Cape Girardeau, St. Louis Metropolitan, Tri-County, and Greene Counties. Commission on Continuing Education

The Commission reviewed and approved the following accreditation actions:

Reaccreditations for Organization: SSM Health Care St. Louis-St. Louis; Kansas City Southwest Clinical Society-Kansas City; Capital Region Medical Center-Jefferson City; Bothwell Regional Health Center-Sedalia; Saint Francis Medical Center-Cape Girardeau; Institute for International Medicine-Kansas City.

Progress Reports: St. Anthony's Medical Center-St. Louis; St. Mary's Health Center-Jefferson City.

The Commission planned and approved the 2013 Annual Convention CME Program approved for 18.75 hours of AMA PRA Category 1 creditsTM.

Providers Relinquishing Accreditation Status: Primaris-Columbia, MO; Kneibert Clinic-Poplar Bluff, MO; Skaggs Community Health Center-Branson, MO.

The Missouri State Medical Association currently accredits thirty-two entities statewide.

The Missouri State Medical Association and Kansas Medical Society co-sponsored CME Provider training on October 4, 2013 in Blue Springs, Missouri. Staff from the Accreditation Council for Continuing Medical Education (ACCME) and the American Medical Association (AMA) presented at the seminar. Additionally, surveyor training was conducted for the CME Committee members.

MSMA staff attended the state medical society meeting sponsored by the ACCME and reported back to the Commission on issues and trends relevant to CME. Additionally, staff participated in the ACCME's monthly noon conference calls.

The MSMA submitted its self-study report for re-accreditation. The MSMA will receive notification of the type and term of accreditation in March of 2014.

The Commission continues to work with Oakstone Publishing as the vendor to provide online CME for MSMA members.

Membership

MSMA closed out the 2014 year with a total of 4,747 members. Active members account for 3,196 and the rest are either retired members, residents, or students. Even though MSMA gained 333 new active members in 2014, the overall membership numbers were down 183 from the previous year. In 2014 MSMA staff sent out a total of 34,510 invoices seeking renewed and new members. Fifty-four percent of active MSMA dues-paying members are 54 years old or younger, and MSMA had 227 DOs for the 2014 membership year. AMA had a total of 2,438 active members from Missouri last year.

During the MSMA Convention this year, any non-member physician who attends will be invited to join MSMA when they arrive at the registration desk, and directed to the membership station for more information about the benefits and importance of supporting organized medicine. In addition to the invaluable benefits MSMA provides through advocacy and educational resources, benefits offered through our many outside partners could save our members an estimated $1,700.

Our partnerships with outside member service providers now include the endorsement of two additional offerings. One, TSYS Merchant Solutions, brings members preferred credit card processing systems at substantial savings, and the other, Medical Waste Services, promises every MSMA member an immediate savings on whatever

they currently pay for medical waste disposal.

Long-standing members and leaders of MSMA are asked to greet new members of MSMA when you see that they have joined, and reach out to them about getting involved. Peer-to-peer interaction and encouragement is crucial to member recruitment and retention, and is the role of all members. If you know of someone who is not a member, work with MSMA staff to help get them on board.

Joining MSMA has never been easier. The MSMA website (www.msma.org/joinrenew) allows any physician to join or pay renewal dues online. Existing members can quickly update their profile information and access important physician resources by logging in to the secure areas of our website. Staff continues to work very hard to capture the email addresses of our members and all physicians in Missouri, in order to deliver timely messages and save postage expenses.

Members are recognized for notable accomplishments in Missouri Medicine, and also on the MSMA Facebook page. Staff contacts each member when they are honored, and they seem to appreciate this. And when they do, they give our page a look and a "LIKE" at www.facebook.com/momedical. Be sure you do too.

Missouri Physicians Health Program

This has been a busy year as indicated by the number of referrals and the numerous Missouri physicians that were assisted. The MPHP provides a variety of services. This includes consultation, intervention, referral for treatment, monitoring and advocacy. The consultive service is especially active. Hospital administrators, physicians, colleagues and family members call the Program Coordinator or Clinical Coordinator to make a referral, discuss a potential referral or brainstorm about the necessity of making a referral. Information is often requested about how to identify problems, what services are available and how to handle issues of impairment should they occur. Many hours are required to meet their needs. The MPHP provides a safe and knowledgeable venue for any question or concern about physician health.

Missouri State Medical Association Insurance Agency

Your MSMA Insurance Agency is an independent insurance agency that offers insurance consultation to all Missouri physicians. The Agency offers policies primarily for professional liability and health, but also covers workers compensation, business office coverage, disability, long-term care, and life.

The board of the Insurance Agency reviews budget and financial statements at each quarterly meeting. Agency financial statements are audited and consolidated into the MSMA financials.

The board is supportive of the Agency and encourages all MSMA members to contact the Agency for a competitive health insurance or professional liability insurance bid.

Missouri State Medical Foundation

Your Missouri State Medical Foundation loaned $123,000 to Missouri medical school students in 2014. The Foundation has loaned more than $11 million to Missouri medical students over the last fifty years.

In addition to continuing to make student loans, the Foundation is annually funding five $2500 MSMA Scholarships at each of the six Missouri medical schools.

The Foundation has also assisted with the creation of scholarship funds by providing $5000 matching grants to:

- St Charles / Lincoln County Medical Society
- Boone County Medical Society
- Northeast Missouri Medical Society
- Northwest Missouri Medical Society
- Cole County Medical Society
- Quad County Medical Society
- Metropolitan Medical Society of Greater Kansas City
- MSMA Alliance

The current financial strength of the Foundation is due to the strong support received from the MSMA and the MSMA Alliance.

Public Affairs Commission

The MSMA Public Affairs Commission was directed to carry-out Resolution #13 from the Association's Annual Convention April 2014.

Resolution #13

Resolved, MSMA send a clear message that, in general, businesses that wish to promote the goal of better health should recognize that selling tobacco products contradicts that commitment.

To that end, your Public Affairs Commission:

1. MSMA sent an opinion/letter to the editor to the Missouri media encouraging businesses and pharmacies that also sell tobacco products to follow the lead of CVS pharmacy by eliminating tobacco sales in their places of business.

2. MSMA published in Missouri Medicine and in Missouri Pharmacis, the magazine of the Missouri Pharmacy Association, an article regarding the history of this issue, and how MSMA is encouraging businesses and pharmacies that also sell tobacco products to follow the lead of CVS

pharmacy by eliminating tobacco sales in their places of business.

MSMA has joined the St. Louis Smoking Cessation Awareness Campaign to educate St. Louisans and Missourians on the resources available to those who want to quit smoking. Research shows a smoker's chance of successfully quitting is doubled if they engage their doctor or health care professional to help. MSMA promoted additional smoking cessation resources: the Missouri Tobacco Quit line at 800-QUIT-NOW, or online at www.PlanMyQuit.com.

Your Public Affairs Commission recommended that MSMA partner with the free "Dispensary of Hope", a Nashville, Tn.,-based service that collects unexpired medical samples so they can be dispensed to nearly 80 community health centers and charitable pharmacies in 15 states. Donor practices place the drugs in a secured box provided by the service, which covers shipping costs. The service logs the medications, and sends back a receipt with the information for the practice to have for recordkeeping and regulatory compliance purposes. MSMA publicized this service via member materials, publications, both print and electronically.

MSMA conducted an Advocacy Workshop that trained 30-plus physicians on grassroots lobbying and communication. Presenters included experts from the AMA's Political Education Programs department, and four physician legislators currently serving in the Missouri General Assembly.

MSMA and the Show Me Tort Reform Coalition organized the 2015 White Coat Rally Day where more than 100 physicians turned out to support Tort Reform.

Publications Committee

Volume Number 111 of *Missouri Medicine* showcased national authors and featured ground-breaking scientific articles. This volume published four issues featuring "theme" articles and two issues featuring a variety of scientific topics and micro-series. It contained 524 pages and 62 scientific articles. The *Journal* received a record number of scientific manuscripts for peer-review and continued regular departments.

Your current *Missouri Medicine* is peer-reviewed, indexed by MEDLINE, The National Library of Medicine, and linked to PubMed Central. We are included in EBSCOhost databases, the largest premium online information resource for researchers.

In 2014, *Missouri Medicine* featured two ground-breaking studies: Increased Coronary Plaque Found in Long-Distance Running and the Use of Beta Blocker Eyedrops for Acute Migraines. In addition, we were proud to partner with the following medical schools and organizations.

Themes

- Nutrition and Exercise Physiology by University of Missouri School of Medicine, College of Human Environmental Sciences and College of Agriculture Food and Natural Resources
- Pediatric Developmental & Behavioral Health by Children's Mercy Hospital, Division of Developmental & Behavioral Sciences
- Saint Louis University Center for Vaccine Development
- Bernard Becker Medical Library by Washington University School of Medicine

Mini-Series

- The Bite of the Loxosceles Reclusa
- Clues by Hands
- Death & Near Death Experiences
- Pain Management
- Preventive Cardiology

In 2014, our *Journal* presented its first The Arthur Gale Freedom of Expression Award to Medical Student Nathaniel Nolan. It is to be presented annually to the author of the best commentary article published in *Missouri Medicine*, in honor of Arthur Gale, MD, one of the *Journal's* Contributing Editors and MSMA member since 1976..

Special thanks to our Editorial Board for their good work year after year: Drs. David Fleming, Art Gale, William Reynolds, and Charles Van Way, III, Justin Albani. We welcome as a new Contributing Editor Jeffrey G. Copeland, MD, and new Editorial Board Members: Drs. Pradeep Sahota, Neurology, and James S. Magera, Urology. We thank Drs. Ann Romaker, Sleep Medicine, and Marilyn M. Rymer, Neurology, for their past service.

Missouri Medicine provides reprinted papers for several prestigious medical specialty magazines and journals, and also selectively reprints articles from the medical component societies in Missouri and from national publications appropriate for our audience.

The Publication Committee, Editor, John C. Hagan, III, MD, and Managing Editor, Lizabeth Fleenor, appreciate the many contributions of the MSMA, Alliance members, and others who have contributed to *Missouri Medicine*. The Committee appreciates the Association's continued support of the *Journal*.

Resident Fellow Section

This past year, the resident and fellow section of MSMA engaged in a process of unification and network building within the section and the MSMA. In St. Louis, RFS member Jamie Mull, MD, worked to create a Resident and Fellow section within the St. Louis Metropolitan Medical Society. This has allowed St. Louis members to come together and be mentored, and it has helped facilitate medical student participation for future years in the RFS section. We appreciate all of the support from St. Louis and MSMA, and look forward to increasing resident involvement in Kansas City and Columbia through similar programs this coming year.

Medical Student Sections

A.T. Still University – KCOM

This year has been a great success for the MSS Chapter at A.T. Still University-KCOM. The roster this year contains 34 second- and first-year members who are involved on campus, as well as numerous third- and fourth-year students out on clinical rotations. The spring finished up with a first-year student panel to discuss rotations and preceptorships. This fall has seen many fun activities for our Chapter, including two fundraisers. We have partnered with facility and local physicians to enrich our curriculum with case presentations by Matthew Hardee, DO; Difficult Topics Event with Wes Ryle, MD, and Shakila Mathew, DO; and a Suture and Knot-tying Clinic with Kevin Smith, MD. The Chapter hosted a Fellows Panel for second-year students, focusing on preparation for boards. In December, we once again partnered with the Red Cross to host a blood drive. This drive collected 82 units, the most in our MSS Chapter and school history, and was the Blood Drive of the Month for the Midwest. We look forward to continuing to bring events to our members and reaching out to our local community. Spring elections are just around the corner and, with that, comes the changing of the guards and a bright new year. We look forward to the graduation of members from our Class of 2015.

Kansas City University of Medicine and Biosciences

The Kansas City University of Medicine & Biosciences (KCU) MSS Chapter has had another great year of gaining new members and facilitating new experiences as we continue to grow as a Chapter, being one of the most active organizations at Missouri's largest medical school. Our current roster of 222 members has allowed us to continue to serve out the mission of MSMA in promoting the art and science of medicine and the betterment of public health.

This year, our organization placed our community service initiatives on the international community of public health. Given the events that our healthcare colleagues abroad have faced in the past year, we wanted to do what we could here in Missouri to make an impact for their cause. Teaming up with the Medical Mission run by the Sisters of St. Francis of the Holy Eucharist in Independence, our organization has assisted the mission in the past year.

Volunteers from our group have worked to sort donated medical supplies (surplus and goodwill donations from Kansas City-area hospitals) in order to be organized and shipped to third-world health clinics and hospitals across the globe. The Medical Mission ships approximately two large shipping containers each month to places in need and through the help of our organization.

Aside from our service work, we have continued our tradition of welcoming incoming medical students with a recruitment rally, where we not only share the benefits of joining professional organizations and societies, such as MSMA, but we also provide an opportunity for upperclassmen to offer advice and encouragement to first-year medical students as they begin their transition into medical school. This event was a great success and allowed us to surpass last year's recruitment, helping us to continue our Chapter's growth.

We have hosted several academic review sessions for our members to help them prepare for exams and to help our second-year students review for their boards. We also recently hosted a "Surviving Clerkships" panel along with our colleagues in the Student Osteopathic Medical Association and Missouri Osteopathic Medical Association. At this event, we invited physician preceptors and upperclassmen to come speak to first- and second-year students about what to expect during their clinical rotation years of medical school.

Although first semester has come to a close, the new semester brings forth great opportunities for the KCU MSMA-MSS Chapter. We are looking forward to continuing our service work with the Medical Mission, continuing to host academic reviews, and also hosting a brand new patient presentation event to allow students the opportunity to apply what they have learned in the classroom to individual patient experiences.

We would like to thank Larry Segars, Pharm.D., our faculty advisor in the KCU Department of Student Affairs, and also the MSMA-MSS Division for their continued support of our organization. We are excited to continue our growth and traditions as we move forward into this new year.

St. Louis University School of Medicine

The St. Louis University MSMA-MSS Chapter welcomed the incoming class during their welcome week with a short introduction meeting about MSMA and AMA. Once the first-year class had completed a few weeks of classes and settled in to a routine, we had a social event with delicious pizza from Epic Pizza and Subs for those interested in learning more about

organized medicine, as well as the benefits of joining early on in their medical careers. We followed with a "Success in Medical School" talk, given by Taylor DesRosiers. In November, we hosted a talk concerning GME funding that was given by Julie Gammack, MD.

In terms of collaborative efforts between the Chapters of St. Louis University and Washington University in St. Louis, we held our 2nd Annual Fall Conference, which hosted talks concerning legislation and policy-making, as well as parliamentary procedure. We also hosted a simulated House of Delegates and panel discussion about Medicaid expansion in Missouri. The panel was comprised of Heidi Miller, MD; Tim McBride, PhD; Walton Sumner II, MD; Bob Onder, MD; and William Peck, MD, who served as moderator. In late January, we held our 2nd Annual MSMA-AMA Trivia Night and Silent Auction. The funds raised from this were donated to the Institute for Family Medicine, which is a family practice located in South St. Louis County, which also participates in community and school health programs.

We continued to partner with Health Protection & Education Services, which is located in the Delmar Loop where free health-screening services are offered on the third Saturday of the month. We were able to have three representatives from SLU attend the 2014 AMA Interim Meeting in Dallas; and we look forward to participating in events such as the MSMA Annual Convention and the AMA Annual Convention in the coming months.

University of Missouri – Columbia

The MSMA-MSS at University of Missouri - Columbia started off the year with a successful recruitment event sponsored by Boone County Medical Society (BCMS). We had nearly 80 percent of our incoming first-year medical students join MSMA. BCMS graciously supplied membership incentives, including Maxwell Medical Reference Guides, reflex hammers, and a Littmann Cardiology III stethoscope that was raffled off to new members. This complemented incentives provided by MSMA, which was also a huge draw to new members and included MSMA bags, stationary supplies, and a cash raffle prize. We held a luncheon for first-year students to provide them with information and answer any questions they had about organized medicine.

We also had a very successful fall fundraiser organized by Chapter President-elect Dan Lovinger. Our annual Halloween party, Terrortoma, brought in $2,000 which was donated to MedZou, our local free clinic run entirely by medical students with support from our medical school and attending physicians who volunteer their time for patients. Our other fundraiser was a Trivia Night benefiting Children's Hospital, organized by Community Service Chair Jennifer Haslag-Minoff.

Mizzou had a very successful year in the form of representation at the regional and national level. Chapter Representative Nathan Nolan served as Region Delegate to the AMA House of Delegates and served on the Committee on Medical Education. Junior medical students Shafi Lodhi and Ariel Carpenter attended their first meeting as delegates to the AMA-MSS Interim meeting and got their first taste of organized medicine on a national level.

Upcoming events for students at the University of Missouri - Columbia include: AMA-MSS Region 2 meeting in Omaha, NE; MSMA Annual Convention in Kansas City, MO; and Chapter Executive-Board elections for the upcoming 2015-2016 school year.

University of Missouri – Kansas City

The UMKC Chapter of the MSMA-MSS has had an exciting year thus far. Our year started in June at the National AMA Conference in Chicago. We had four representatives attend the conference and we were able to engage in a variety of activities throughout the conference. We were able to bring back many ideas to implement into our monthly meetings and create a better learning environment for our peers. Being a part of the national conference, we also set a goal to start working on a resolution that we can submit for annual or interim next year. We are currently working toward that goal. Our goals and updates from the conference were discussed with the Chapter members.

With the ideas from the conference still in mind, we planned our first recruitment event. We were able to welcome more than 50 new members from the incoming first-year class alone. The event was held in the fall during the initial week of undergraduate classes in the Oak Street Dorms where food was provided by Jimmy John's. We appreciated the presence of Haley Wansing, MSMA-MSS liaison, and multiple current AMA members, who were able to illustrate the benefits of being a member. The event was a great success and we have enjoyed the addition of multiple new members at our monthly meetings so far.

In November, we sent five students to the 2014 AMA Interim Meeting in Dallas, TX. One of the members was a first-time attendee; so much time was spent getting familiar with the state and regional members and physicians who attended the conference. There were many new leaders appointed to positions for the region and interesting resolutions were discussed. Students were able to bring back these experiences to share with Chapter members.

This past winter, our Chapter planned a Pie-and-Cider Social to help students branch out, as well as to provide some ways to relieve stress during finals. It was a huge success as students were appreciative for a study break and were also able

to mingle with one another. This social idea stemmed from the lack of interaction between the older students in the program and some of the younger years, and we believe it helped bridge some of the gaps in communication. We plan to continue to incorporate socials to help serve the purpose of networking between students.

We have also strived to continue to be a part of the community. We attended the "KC Fun-and-Fitness Day," a community-wide health fair, for the second year in a row. We had multiple games and competitive races and prizes for the kids to enjoy and to keep them moving. We are going to continue to help out the community with a couple of events that are coming up around the Kansas City area. The Kansas City Medical Society is taking part in multiple health events involving educating students about different career pathways and utilizing interactive events to do so. Our Chapter has decided to take part in some of these events as well. We look forward to giving back to the community in this way!

Finally, we are excited to participate in the MSMA White Coat Rally Day at the end of February, as well as attend the AMA-MSS Region 2 Conference in our hometown of Kansas City. We anticipate many of our members to attend the conference. This month we will also be having Robert Bondurant, Executive Director of the Missouri Physicians Health Program, as a guest speaker at our meeting. It has been a great year thus far and we are enthusiastic about the events planned for the rest of the year.

Washington University School of Medicine

Last year's strong Chapter leadership set a firm foundation for us at Washington University. This year, we continued to grow as a group, broadening our reach into our own community and working to strengthen ties throughout the state.

Our Chapter of the MSMA-MSS started the year eager by signing up nearly a third of the incoming first-year class, and we were happy to induct 34 new members. Our first-year students have been enthusiastic and passionate about organized medicine. They have quickly signed up to attend conferences at the national level, showing a great presence at the AMA Interim Conference in Dallas, TX, and have shown keen interest in continuing their momentum in Kansas City this April. They are excited to contribute this coming year by organizing advocacy efforts, participating in committees, and writing resolutions.

In November, we hosted the 2nd Annual Missouri Interim Conference. The event served as a meaningful orientation for incoming and current student members on how to effectively advocate. Edmond Cabbabe, MD, taught budding advocates proper parliamentary procedure and we held a mock HOD session. The day culminated in a live, on-campus debate about Medicaid expansion. We featured State Senator Bob Onder, MD, as a panelist, who spoke on record about Medicaid expansion for the first time that evening. Many thanks to Dr. Cabbabe and Haley Wansing for helping with the event's success this year.

We sent six students to Dallas, TX, for the AMA Interim Conference, where Washington University presented a resolution regarding medical student loan interest rates. Our members took on leadership roles in the Committee on Legislation and Advocacy, and the Committee on Economics and Quality in Medicine. This past summer, one of our members was elected Vice-Chairperson of the MSMA-MSS, Steve Ekman, and he provided excellent direction in mentoring our students into taking leadership roles. The first-year students who participated shared their enthusiasm for advocacy and organized medicine with the rest of their class, who are now signing up in numbers for the White Coat Rally in Jefferson City, and the MSS Advocacy Day in Washington, DC.

Perhaps our biggest success this year, with great support from the St. Louis Metropolitan Medical Society's (SLMMS) leadership, was the establishment of a Medical Student Section within SLMMS. SLMMS has created a voting seat reserved for a medical student on their council, to be shared by one student from Washington University and one student from Saint Louis University. We are incredibly excited about this partnership, and hope that we can now fully integrate St. Louis' medical student body into organized medicine within our own community. SLMMS has been a huge help in getting our students excited about advocacy and have coached us in writing our resolutions. We hope to share our perspectives as students in their conversations. We would like to sincerely thank the SLMMS leadership, particularly Past President Joseph Craft, MD; President Michael Stadnyk, MD; Councilor Ramona Behshad, MD; and Executive Vice President Dave Nowak for all of their help and support in this effort.

Finally, our board has continued to host other lectures, talks, and symposiums for members of the St. Louis medical student community to foster discussion about health policy and other relevant topics. We screened this year's TEDMED talks, held blood drives, and introduced students to the matching process. As a Chapter, we have continued Washington University and MSMA's traditions of cultivating health leaders. We are excited and grateful and are thrilled to continue it into the coming year. **MM**

MSMA Elects Leadership

MSMA Officers

President
John O. Stanley, MD, Kansas City
President Elect
Ravi Johar, MD, St. Louis
Secretary
David Redfern, MD, Springfield
Treasurer
George Hruza, MD, St. Louis
1st Vice President
Charles Van Way, III, MD, Kansas City
Honorary Vice President
Thomas P. Allen, MD, Kansas City
Honorary Vice President
William A. Turner, MD, Nevada
Immediate Past President
Jeffrey Copeland, MD, St. Peters
Speaker
David Chalk, MD, Washington
Vice Speaker
Lancer Gates, DO, Kansas City

Councilors

Chair, MSMA Council
Warren Lovinger, MD, Nevada (6th Dist)
Vice Chair, MSMA Council
Robert Schaaf, MD, St. Joseph (1st Dist)
2nd District
Sandra Ahlum, MD, Hannibal
3rd District
Elie Azrak MD, Chesterfield
Robert Brennan, MD, St. Louis
David Pohl, MD, Town and Country
Michael Stadnyk MD, Chesterfield
4th District
Kevin Weikart, MD, Lake Saint Louis
5th District
Joseph Corrado, MD, Mexico
George Hubbell, MD, Osage Beach
7th District
James DiRenna, Jr., DO, Gladstone
Betty Drees, MD, Kansas City
Lancer Gates, DO, Kansas City
8th District
Brian Biggers, MD, Springfield
Alexander Hover, MD, Springfield
10th District
Charles Lawson, MD, Poplar Bluff
Organized Medical Staff Section
Peggy Barjenbruch, MD, Mexico
International Medical Graduate
Sri Devi Kolli, MD, St. Louis
Young Physician Section
Ramona Behshad, MD, Chesterfield
Resident Fellow Section
Brad Harr, DO, Fairview, IL
Medical Student Section
Josephine Doo, Kansas City

Vice Councilors

1st District
Robert Corder, MD, St. Joseph
2nd District
John Memken, MD, Hannibal
3rd District
Stephen Slocum, MD, Chesterfield
4th District
Martin Willman, MD, St. Peters
5th District
Lisa Thomas, MD, Columbia
6th District
David Kuhlman, MD, Sedalia
7th District
Marc Taormina, MD, Lee's Summit
8th District
Ellen Nichols, MD, Joplin
9th District
David Barbe, MD, Mountain Grove
10th District
Sharon Wallace, MD, Cape Girardeau
Organized Medical Staff Section
James Conant, MD, St. Joseph
International Medical Graduate
Ramona Aitken, MD, St. Louis
Young Physician Section
Sarah Florio, MD, Lee's Summit
Medical Student Section
Ramin Lalezari, St. Louis

Winners of Convention Survey Drawing

Congratulations to **Thomas Allen, MD,** Overland Park, and **Larry Stewart, MD,** Creve Coeur! They won the $100 drawing for answering MSMA's Convention Survey.



Physicians listen to Reference Committee testimony.

AMA Delegates & *Alternate Delgates

Edmond Cabbabe, MD, St. Louis
James Conant, MD, St. Joseph
Ted Groshong, MD, Columbia
Rebecca Hierholzer, MD, Leawood, KS
William Huffaker, MD, St. Louis
Lent Johnson, MD, Hannibal

*Elie Azrak, MD, Chesterfield
*Michael O'Dell, MD, Kansas City
*Charles Van Way, MD, Kansas City
*Warren Lovinger, MD, Nevada
*Nathaniel Murdock, MD, St. Louis
*Kavon Javaherian, Columbia, Student

AMA Board of Trustees
David Barbe, MD, Mountain Grove

Alliance

President Sue Ann Greco, St. Louis
President Elect Jana Wolfe, Springfield

Miss an Annual Convention General Session?

Handouts for MSMA's General Sessions can be found at www.msma.org/ConventionGeneralSessions

2015 Annual Convention Attendance

Delegates	*92*
Members	*122*
Exhibitors	*34*
Staff	*23*
Guests	*165*
Officers	*9*
Councilors/Vice	*31*
Alliance	*40*
Total	*516*

(Actual numbers will not balance due to overlaps in positions served.)

Officers
Chalk, David, MD
Copeland, Jeffrey, MD
Gates, Lancer, DO
Hruza, George, MD
Poggemeier, David, MD
Redfern, David, MD
Slocum, Stephen, MD
Stanley, John, MD
Wolfe, James, MD

Councilors
Ahlum, Sandra, MD
Azrak, Elie, MD
Behshad, Ramona, MD
Biggers, Brian, MD
Brennan, Jr., Robert, MD
Corrado, Joseph, MD
DiRenna, Jr., James, DO
Gates, Lancer, DO
Harr, Brad, DO
Hover, Alexander, MD
Hubbell, George, MD
Johar, Ravi, MD
Kolli, Sri Devi, MD
Lovinger, Jr., Warren, MD
Nolan, Nathan
Pohl, David, MD
Schaaf, Rob, MD
Turner, Kirby, MD
Weikart, Kevin, MD

Vice Councilors
Barbe, David, MD
Conant, James, MD
Corder, Robert, MD
Doo, Josephine
Florio, Sarah, MD
Kuhlmann, David, MD
Lawson, Charles, MD
Nichols, Margaret Ellen, MD
Puricelli, Michael, MD
Stadnyk, Michael, MD
Taormina, Marc, MD
Thomas, Lisa, MD

Delegates
District 1
Buchanan County Medical Society
Conant, James, MD
Corder, Robert, MD
Gupta, Chakshu, MD
Reynolds, James, MD
Weigand, Tom, MD

District 2
Northeast Missouri Medical Society
Bukstein, Michael, MD
Halpin, Stephen, MD
Johnson, Lent, MD
Memken, John, MD

District 3
St. Louis Metropolitan Medical Society
Bohigian, George, MD
Butler, David, MD
Cabbabe, Edmond, MD
Cabbabe, Samer, MD
Gelhot, Helen, MD
Goodhope, Karen, MD
Greco, Thomas, MD
Hruza, George, MD
Huffaker, William, MD
Laird, John, MD
Lund, Jr., Herluf, MD
Murdock, Nathaniel, MD
Page, Sam, MD
Ryall, Jo-Ellyn, MD
Slocum, Stephen, MD
Stadnyk, Michael, MD
Swingle, Christopher, DO
Thomasson, Jeffrey, MD
Wild, Alan, MD

District 4
St. Charles-Lincoln Medical Society
Agee, Carson, MD
Andrews, Brian, MD
Copeland, Jeffrey, MD
Glaser, Jeffrey, MD
Rigg, Lee, MD
Sill, William, DO
Tyree, Thomas, MD

Tri-County Medical Society
Chalk, David, MD
Moore, John, MD
Raney, Michael, MD
Ratcliff, Keith, MD

District 5
Audrain County Medical Society
Wilbers, Raymond, MD

Boone County Medical Society
Cunningham, Mila, MD
Early, Bridget, MD
Govindarajan, Raghav, MD
Groshong, Ted, MD
Heimburger, Richard, MD
Rajcher, Wilma, MD
Thomas, Lisa, MD

Lake of the Ozarks Medical Society
Powell, Jenny, MD

District 6
Pettis County Medical Society
Kuhlmann, David, MD

West Central Medical Society
Haynie, William, MD
Long, Curtis, MD
Torontow, John, MD
Turner, William, MD

District 7
Kansas City Medical Society
Allen, Thomas, MD
Butin, Richard, MD
Dorzab, William, MD
Hahn, Jr., Frederick, MD
Lovinger, Thomas, MD
O'Dell, Michael, MD
Potts, Donald, MD
Salanski, Stephen, MD
Stanley, John, MD
Taormina, Marc, MD
Van Way, III, Charles, MD
Youmans, Ronald, MD

District 8
Greene County Medical Society
Clarke, Michael, MD
Knowlton, III, Norman, MD
Redfern, David, MD
Reynolds, William, MD
Wolfe, James, MD
Wright, Andy, MD

Ozarks Medical Society
Hamilton, William, MD

Southwest Medical Society
Nichols, Ellen, MD

District 9
South Central Counties Medical Society
Barbe, David, MD

District 10
Cape Girardeau County Area Medical Society
Jung, Christopher, MD
Wallace, Douglas, MD
Wallace, Sharon, MD

Jefferson County Medical Society
Shaplin, Alfred, MD

Quad Counties Medical Society
Lawson, Charles, MD

Medical Schools
A.T Still Osteopathic School of Medicine
Pavelko, Christina

Kansas City University of Medicine
Ahmed, Maaheen
Pease, Eric

Saint Louis University
Flo, John
Siebert, Emily

University of Missouri-Columbia
Carpenter, Ariel
Lammert, Jared

University of Missouri-Kansas City
Doo, Josephine

Washington University
Javaherian, Kavon
Lalezari, Ramin

Organized Medical Staff Section
Andelin, Clark, MD

Resident & Fellow Section
Offutt, Cory, MD

Young Physician Section
Florio, Sarah, MD

Delegates-At-Large
Past Presidents
Barbe, David, MD
Cabbabe, Edmond, MD
Copeland, Jeffrey, MD
Dorzab, William, MD
Hahn, Jr., Frederick, MD
Johnson, Lent, MD
Knowlton, III, Norman, MD
Slocum, Stephen, MD
Thomasson, Jeffrey, MD
Van Way, III, Charles, MD
Wolfe, James, MD
Youmans, Ronald, MD

Speaker
Chalk, David, MD

Vice Speaker
Gates, Lancer, DO

Members
Ahlum, Sandra, MD
Ajans, Z.A., MD
Alikhan, Muhammed
Arbab, Ali A, MD
Azrak, Elie, MD
Bateman, Gustin, MD
Batterson, James, MD
Behshad, Ramona, MD
Belshe, Sidney, MD
Biggers, Brian, MD
Brennan, Jr., Robert, MD

Buchanan-McCanse, Barbara, MD
Cabbabe, Amy, MD
Casey, Matthew, MD
Clark, Evan
Colbert, Stephen, MD
Cole, Donald, MD
Cole, Sherman, MD
Corrado, Joseph, MD
Corry, Francis, MD
Daniels, William, DO
Daus, Arthur, MD
DeBoard, James, MD
DelCampo, Louis, MD
DiRenna, Jr., James, DO
Dixon, George David, MD
Edison, Karen, MD
Ekman, J. Steven
Erkmann, John, DO
Ettelson, Charles, MD
Fakhoury, Donald, MD
Fischer, Keith, MD
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