Missouri Medicine

The Journal of the Missouri State Medical Association www.msma.org November/December 2013



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also

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Missouri Medicine

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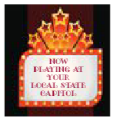
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Preserve the Integrity of Medicine in Missouri

A 2014 "Must Do" Tick List

☑ **Pay MSMA 2014 dues.**
If not an MSMA member, join immediately! Visit www.msma.org/JoinRenew.

☑ **Lead from the front and by example.**
Are all physicians in your group MSMA members? Remind them to pay 2014 dues. Educate on the importance of all Missouri physicians belonging to MSMA. Recruit one physician outside group to join. MSMA officers and leadership recruit three to four new members. Visit www.msma.org/RecruitmentTools.

☑ **Contribute to Missouri Medical Political Action Committee.**
Minimums: General MSMA members $150; MSMA Officers & Leadership $500; MMPAC Board $1000. Call MSMA @ 800-869-6762 to pay over the phone.

☑ **Attend White Coat Day at the Capitol on March 5.**
Lobby for essential bills at the Capitol (e.g. tort reform re-enactment) and against noxious bills (e.g. perennial expansion of scope of practice by physician wanna-bees). Sign up for Physician of the Day. Visit www.msma.org/Advocacy.

☑ **Educate your state Senator and Representative.**
Contact MSMA for background information and educate lawmakers on re-instating tort reform law. Keep in touch via calls, letters and e-mail throughout the session. Be their most attentive constituent.

☑ **Read the weekly MSMA Legislative Report.**
Respond to all "Take Action Items!" Do your part!



John C. Hagan, III, MD, FACS, is a Kansas City ophthalmologist and *Missouri Medicine* Editor since 2000. *Contact: jhagan@bizkc.rr.com*



Leadership Roles Allow Physicians to Make a Difference

by David O. Barbe, MD

As health care evolves, the only people looking out for the primacy of the physician-patient relationship are physicians.



David O. Barbe, MD, MHA, MSMA member since 1985, is Chair of the American Medical Association Board of Trustees. He is a Family Practice physician from Mountain Grove, MO.
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Reprinted with permission from the AM News August 19, 2013.

Only four years into my medical practice while I was still finding my way as a physician, I attended a meeting of the Missouri State Medical Association. One of the more senior members approached me that night and asked if I would like to become a vice councilor, or regional board member.

I was honored by the request, but I was also startled. I was only beginning to understand what it meant to be a doctor. What made him (or me) think I could make a difference on the board of our state's medical society?

In the end, I took the position, which somewhat to my surprise, proved to be very interesting and rewarding. That role at the MSMA exposed me to people I wouldn't have met and stimulating ideas I hadn't thought about. I found that it was complementary to what I was doing day to day, so it actually helped me in my medical practice. It also helped me realize early in my career that more and more decisions about medical practice were going to be made outside the exam room, and if doctors, including me, were going to influence how these decisions were made, we were going to have to step up and get involved.

For me, that first leadership opportunity opened doors that otherwise would have been closed. It also gave me an opportunity to make a difference.

I was lucky. I had good mentors at the MSMA who were patient and saw potential in me that I didn't recognize in myself. Like most of you,

my medical training had not prepared me to lead an organization, or even a medical team. I had no idea leadership was a skill I would need.

Students today do recognize that need, and so do medical schools: teamwork and leadership training are both high on the list of subjects being addressed through the 11 AMA grants announced in June to Accelerate Change in Medical Education.

This addition to the medical curriculum is past due. We have an urgent need for physician leadership on many levels. The most obvious is in the politics of health system reform.

Since I have been AMA Chair of the Board of Trustees, I have had time to look back along my own path, and I have come to several conclusions regarding physicians and leadership. I am sharing them with you in hopes it may give some of you ideas and motivate you to act. Your talents are badly needed.

- Leadership opportunities often come unbidden. Take advantage of these opportunities.

- The first step toward leadership is participation. If you are invited, get involved. If you see an opportunity, volunteer. They will be glad to have you. And no, you are never too young or too old.

- If you see something that needs changing, speak up. Physicians are regarded as leaders in our society, and other people will be inclined to listen to what you have to say. This is true whether you want to wrestle with an issue facing your medical staff, you want your community to add bike paths, or you want your church or civic club to explore ways to provide medical care to the under-served.



Right now, there are a total of 20 physician members of the 113th Congress including three senators, 16 representatives, and a delegate from the American Virgin Islands.

- Participation and leadership happen at many levels, and there is no lack of opportunity. At first, get involved where you are most comfortable and where you find a cause worth your time and talents. Consider neighborhood or civic groups, political meetings and community gatherings, not to mention your medical staff, local and state medical societies and the AMA. These groups all have boards that need members, committees that need workers and all those committees also need leaders.

- On the professional front, surveys have shown that one source of physician frustration with hospitals is a lack of physician leadership or representation on hospital boards. That offers another opportunity.

- For those so inclined, physicians can make a big difference in party politics. Right now, there are a total of 20 physician members of the 113th Congress including three senators, 16 representatives and a delegate from the American Virgin Islands. Numerous physicians hold seats in their state legislatures and city councils.

- Keep in mind that leadership is generally a result of cumulative experience. That means beginning with a small job and working your way up. Sometimes it's hard to believe you're really making a difference, but think of it as deferred gratification. Anybody who has gone through medical school and clinical training can surely identify with that.

- Being a leader doesn't always assure popularity. I've noticed that the more visionary a leader is, and the more he or she strives to take people to a different place, the more difficult it can be.

- Some people are born leaders, but most of us have to learn how to lead. Some of the skills we all need daily in this world of team-based medicine are the same that are found in good leaders: being able to delegate, being a good listener, and being able to manage the give-and-take of negotiation.

- MSMA offers leadership and advocacy training, as does the AMA, and we will soon be adding more. In the meantime, you can find existing opportunities on the AMA website at www.ama-assn.org/go/leadership.

- The AMA Foundation also presents a number of possibilities for leadership. Additionally, the Foundation supports its members' meaningful pursuits on a local and national level. For more, go to www.ama-assn.org/go/foundation-celebration.

- If you are a member of a hospital medical staff, the AMA Organized Medical Staff Section has developed a number of webcasts on leadership, ranging from Leadership in Health Care Change, to Leadership Perspectives on Providing Accountable Care, to a basic Primer on Meeting Management. Visit www.ama-assn.org/go/omsswebcasts.

The idea of physician leadership is important to me and one that I write about with a sense of real urgency.

As we watch our new health care system take form I believe that the only people who are looking out for the primacy of the physician-patient relationship are physicians. Every day, decisions are made which could significantly affect the future of that all-important connection. Physicians must play a role in those decisions.

Our patients are counting on us. As their doctors, we must not miss this chance to make a difference by being willing to step up and lead. MM



Be the Flex in Medicine's Muscle for 2014

by Jeff Howell, JD

Scan to Contact Lawmakers

Scan, look up lawmaker, and save to contacts.

Help out by coming to Jefferson City for our White Coat Day on March 5, 2014. The more physician visibility we have in the Capitol, the better.



Jeff Howell, JD, is MSMA's General Counsel and Director of Governmental Relations.
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Now that winter is upon us, the flipping of the calendar will not be far behind. And once that happens, the 2014 legislative session will be poised to begin. Legislators from across the state will convene in Jefferson City on January 8, 2014, to gavel in the 2nd regular session of the 97th General Assembly.

One thing that will make the upcoming session interesting is that it is an election year. All of the seats in the House of Representatives and half of them in the Senate will be up for grabs next November. In the past, this sometimes keeps the session from getting out-of-hand. But that doesn't mean medicine won't have its share of issues to deal with as the opening gavel drops.

Here's a rundown of what we anticipate for the upcoming session:

Medicaid Transformation

What was once termed, "Medicaid expansion," has become a Herculean effort to change the delivery and payment system of the state's MO HealthNet program. As was the case last year, it seems highly unlikely that the legislature will expand Medicaid up to 138% of the federal poverty level as suggested by the Affordable Care Act. That, however, does not mean there won't be a serious look at the program.

That inspection began last session with a bill that never received the traction necessary to clear the usual legislative hurdles. Both chambers followed that up this summer by convening hearings across the state to hear what the people had to say about the process. Most of the voices clearly wanted full expansion. But nevertheless, we expect the House to introduce a bill merely to change the way MO HealthNet operates early in the session. We're a little less clear what the Senate has in store for this issue, but if it does anything, it will likely be similar to the House plan.

The House is still holding hearings on this issue through November, so we're not quite sure what the final product will look like. But we do know that it is likely the democrats will hold out for some expansion, while some republicans would rather pass nothing at all than include expansion. The same personalities from last year are involved in this debate. Regardless, MSMA will be on top of this issue.

Tort Reform

As you probably know by now, the state Supreme Court ruled that state's cap on noneconomic damages to be unconstitutional back in the summer of 2013. Last year, we worked hard to reinstate the $350,000 cap during the legislative session. Our bill passed the House of Representatives, but got lost in a Senate filibuster during the final weeks of session. It was a valiant effort on a sticky issue, and we plan to bring it back this year.

The Supreme Court ruled that the noneconomic damages cap was unconstitutional because medical malpractice was a cause of action available at common law. So our bill simply removes medical malpractice from the common law and creates a statutory cause of action in its place. It seems simple, but in reality doing this is extremely rare. That makes it a difficult bill to pass. Add to that the fact that it is an election year, and there will be some factions at the Capitol that would prefer a statewide vote on a very expensive constitutional amendment.



MSMA is lining up volunteers to spend a day in the Capitol as MSMA's Physician of the Day. This excellent program is warmly received by the General Assembly and participating physicians. Lawmakers and staff benefit from knowing good medical attention is close, and physicians enjoy spending a day in the Capitol, experiencing the political process first hand.

Would you consider volunteering? One physician per day is needed every Tuesday, Wednesday, and Thursday during the legislative session. Plan to arrive in the Capitol around 9:00 or 9:30 a.m., and stay until 2:00 or 3:00 p.m. (except Thursdays, when the House and Senate typically adjourn around noon).
If you are interested in serving in this worthwhile project, please contact MSMA's Kenny Jackson at 800-869-6762 or by e-mail at kjackson@msma.org. Available dates can be viewed at www.msma.org/PhysicianoftheDay.

We'll keep working the floor to get this thing passed. You can help out by coming to Jefferson City on March 5, 2014, for our White Coat Day. The more physician visibility we have in the Capitol, the better.

APRN Independent Practice

For the third year in a row, we anticipate the nurse lobby to introduce a bill that would eliminate collaborative practice in Missouri, and give APRNs a statutory scope of practice that invades medicine. As has been the case in prior years, if the nurses can't pass their bill wholesale, they will attempt to reach their goal in a piecemeal fashion, like pushing for the elimination of the 50-mile proximity rule.

Any year licensed professions fight is another year the legislature gets tired of it. Since this is the third year of this battle, we anticipate quite a few legislators being exasperated by it. Eventually, enough elected officials will grow tired of it to force us into concessions. That's just the way these scope-of-practice skirmishes are fought.

Last year, the APRNs were granted the authority to practice outside the 50-mile rule if they used telehealth and it was part of a collaborative practice agreement. We are of the opinion we should at least wait to see how that works out before we end collaboration altogether.

Tanning Beds

Once again, we will make an effort to force tanning salons to require parental consent before minors can use tanning beds. The legislature is generally opposed to these types of anti-business requirements, but we'll give it a good push nonetheless.

Immunization Registry

The state's immunization rates are pretty low, and there is already a statewide immunization registry available for physicians who provide vaccinations. However, the many do not use the system. So, we anticipate a bill that would require physicians to use the immunization registry. Even though this wouldn't raise immunization rates by itself, it would allow certain people access to who is giving them. We're not quite sure of all the nuts and bolts at this time, but we'll stay on the lookout for the language.

Drug Monitoring

Speaking of databases, MSMA is on the record as a proponent of this effort to establish a statewide database for controlled substance prescriptions. Missouri is the only state which doesn't have such a system in place to combat drug diversion. This bill never really got started last year, but we're sure it will return.

Motorcycle Helmet Repeal

As we do every year, we will oppose a repeal of the state's motorcycle helmet law. This language, which made it into the final weeks last year, is an annual adventure pitting cycle enthusiasts against the Department of Transportation, law enforcement, and public safety groups.

And much, much more...

Quite a few health-related bills passed last year, which means we won't have to deal with those issues again in 2014. But there will be new issues that are introduced to fill that void. We don't know what those are just yet, but we'll promise to keep you informed via the MSMA Legislative Report, which is sent to members each week during the session. When we ask you to contact your legislator on an issue – or even when we don't – please heed our advice, because medicine's opponents will be placing their calls. Nothing is better than for us to hear from a legislator that they've heard from their docs back home on a certain issue. Stay informed on the issues. Get involved. Call your Senators and Representatives. You can make the difference. You are the flex in medicine's muscle. MM

HISTORY OF TORT REFORM IN MISSOURI

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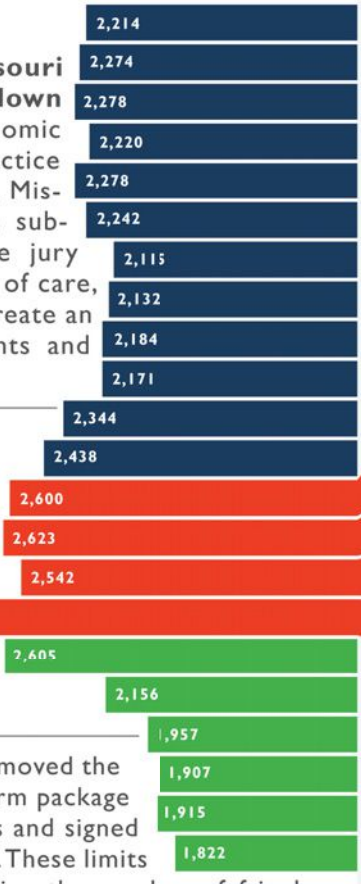
A CRISIS DEFINED

WHAT HAPPENED?

On July 31, 2012, the Missouri Supreme Court struck down reasonable limits on non-economic damages in medical malpractice lawsuits. Without these limits, Missouri's healthcare industry is subject to erratic and excessive jury awards that will raise the cost of care, decrease access to care, and create an unfair environment for patients and their families.

THIS IS WHAT A CRISIS LOOKS LIKE

BEFORE TORT REFORM WENT INTO EFFECT, THE NUMBER OF CLAIMS BALLOONED TO AN ALL-TIME HIGH – 3,051.



1986
The Democratic legislature passes a cap on non-economic damages

1992
The Missouri Supreme Court upholds the constitutionality of caps (Adams v. Children's Mercy Hospital)

2002
The Missouri Supreme Court rules that separate caps could be applied to separate defendants — making the caps ineffective

2003
Legislature passes a cap on non-economic damages; ***vetoed by former Governor Bob Holden***

2004
Legislature passes a cap on non-economic damages; vetoed by former Governor Bob Holden

2005
Legislature passes a cap on non-economic damages; signed by former Governor Matt Blunt

2012
The Missouri Supreme Court rules caps on non-economic damages are unconstitutional

2013

SHOW-ME TORT REFORM

Source: 2011 Missouri Medical Malpractice Insurance Report | Missouri Department of Insurance, Financial Institutions & Professional Registration

With this decision, the court removed the centerpiece of a 2005 tort reform package passed by Republican majorities and signed by former Governor Matt Blunt. These limits had an instant effect of shrinking the number of frivolous lawsuits to an all-time low, and has helped Missouri attract and retain doctors.

Help prevent another crisis by passing tort reform in 2014!

WHAT IS THE DIFFERENCE BETWEEN ECONOMIC AND NON-ECONOMIC DAMAGES?

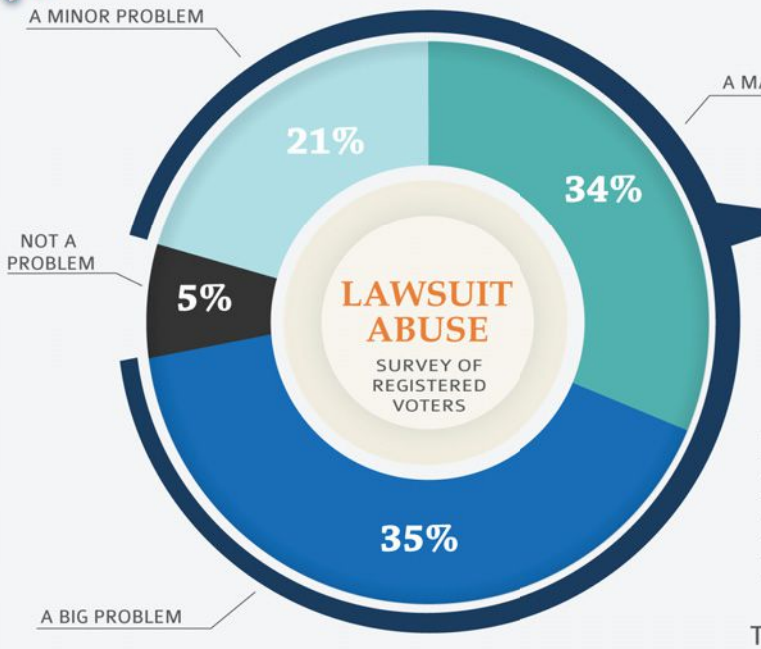
This legislation does not affect the amount a plaintiff can recover for ***economic damages****, which include past and future medical bills, expected lost wages, and other tangible damages.*

Every tort reform proposed is specific to limiting jury awards on ***non-economic damages****. This includes damages for pain and suffering, emotional distress, and other intangible injuries. These damages involve no direct economic loss and have no precise value. It is very difficult for juries to assign a dollar value to these losses, given the minimal guidance they customarily receive from the court. As a result, these awards tend to be erratic and – because of the highly-charged environment of personal injury trials – excessive. It is a difficult issue to address objectively because of the emotions involved in cases of serious injury, and because of the financial interests of plaintiffs' lawyers.*

NATIONAL POLL: LAWSUIT ABUSE IS A PROBLEM

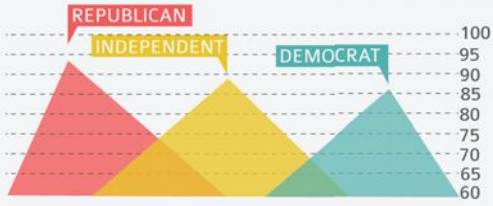
VOTE YES!

www.ShowMeTortReform.com



89%

OF REGISTERED VOTERS CALLED LAWSUIT ABUSE A "PROBLEM"



THIS VIEW CUTS across PARTY LINES:

- 94% OF REPUBLICANS
- 89% OF INDEPENDENTS
- 86% OF DEMOCRATS

SAY IT'S A PROBLEM

75%

BELIEVE NON-ECONOMIC DAMAGES SHOULD BE LIMITED

73%

LIKELY TO VOTE FOR A CANDIDATE WHO TACKLED TORT REFORM

IN a national poll of registered voters, the reponse was overwhelming: people believe that we have a lawsuit abuse problem in this country. 88% of those surveyed said they wanted safegaurds in place to prevent businesses from groundless lawsuits.

Without caps on non-economic damages in Missouri, we are open to the worst-case scenario that voters raised serious concerns about: rampant lawsuit abuse that hurts small business owners, consumers, and ultimately our state's economy.

75% believe pain and suffering (non-economic) damages should be limited

73% are more likely to vote for a candidate who supported lawsuit abuse reforms.

83% agreed that the liability lawsuit system was in need of improvement.

SHOW-ME TORT REFORM

Source: August 2012 Lawsuit Abuse Poll of registered voters conducted by Luce Research | American Tort Reform Association

AMA Meeting Forging Toward an SRG Fix

by the Missouri Delegation to the AMA

The 2013 Interim Meeting of the American Medical Association was held in National Harbor, Maryland, a suburb of Washington in early November. This is appropriate, as the function of these meetings is strictly advocacy. This meeting gives us the opportunity to direct AMA legislative efforts toward those issues of most concern to our membership.

For many years, indeed for almost two decades, the AMA has been fighting to end a dysfunctional mechanism of Medicare financing called the SGR (Sustainable Growth Rate). This was devised by Congress in 1996 as a complicated mechanism to control health care causes by penalizing physicians when Medicare costs rose. Obviously, with a big increases in the number of Americans on Medicare, and increasing costs for medical care for everyone, this mechanism has been unsustainable. Each year there is a programmed reduction in physician payment. Each year Congress, recognizing that physicians will not tolerate these planned reductions, provides a temporary fix. This simply kicks the can down the road. This year, our AMA has the best opportunity in many years to fix it once and for all. The AMA has been working with two Congressional Committees to develop a solution. These efforts have resulted in a bipartisan agreement which will hopefully be approved by the end of the year. The House of Delegates overwhelmingly approved this proposal. In addition, we will continue to lobby for annual increases in payments (though the bill includes a freeze), development of alternative payment models including private contracting, changes in the proposed value-based purchase programs, protection of small medical practices, as well as other needed changes in Medicare.

One important issue is the many expensive government mandates for physicians. The planned institution of ICD-10 is expected to cost $30,000 to $80,000 for small practices, and more for groups. It has repeatedly been emphasized by the House that this expense will do nothing to improve patient care. We continue to advocate for repeal, or, at the very least, a delay in implementation. If the government persists, physicians should receive some reimbursement for having to purchase software to use it.



Ted Groshong, MD, Columbia, MSMA member since 1976, is a pediatrician and a Missouri Delegate to the AMA.
Contact: GroshongT@health.missouri.edu

A government program using Recovery Audit Contractors (RAC) has been a particular concern for physicians and hospitals. Defending against their audits, which retroactively demand reimbursement for previous services, is expensive and onerous. The AMA has been directed to lobby vigorously for proper compensation for physicians (including legal fees) when these audits have been successfully challenged, as well as appropriate penalties for RAC errors.

In other actions the AMA supports the end of a requirement that a physician certify the estimated time the patient will need to remain in the hospital as a condition for inpatient services. If CMMS persists in requiring it, the physician should at least be furnished with appropriate information such as the Geometric Mean Length of Stay (GMLOS) to assist him or her in their decisions. Additionally, we need to continue efforts to repeal the "two midnight rule," which has the possible result of forcing physicians to keep patients in the hospital to long, thus increasing health care costs.

New mechanisms for reimbursing health care, such as paying a team for providing certain services, raises a whole series of issues. Health care teams are being touted as the wave of the future. If so, the AMA has been insisting that physicians clearly be recognized as leaders of the teams, and disbursement be controlled by these leaders. They are the only ones who have adequate knowledge of the individual contributions of each member of the team.

Additionally, with increased corporate medical practice, it is critical that physicians be in control of our medical staff bylaws, that we not be penalized for advocacy on behalf of our patients, and that we have freedom to communicate appropriately with our patients. There must be no interference with the independent judgment of physicians, or interference by medical contractors with the right of the physician to make medical decisions for care of patients. This has becoming of increasing importance due to the large number of physicians being employed by hospitals.

The Council on Ethical and Judicial Affairs (CEJA) is constituted to address AMA policy regarding physician rights, patient rights, and ways to ethically deal with emerging issues in health care. Their efforts are thoughtful, detailed,

and relevant. CEJA addressed a number of issues, including physician exercise of conscience, and potential conflicts between the religious and philosophical beliefs of the doctor, which might differ from those of the patient. There was an interesting report concerning ethical issues which result from innovations in diagnostic and treatment modalities, mechanisms of health delivery, marketing, and on professionalism. One issue which has been of increasing interest has been gifts to physicians from health care companies. A report was presented after multiple revisions over several years. Below is a summary of the most recent recommendations of CEJA, unanimously adopted by the AMA House of Delegates:

"To preserve the trust that is fundamental to the patient-physician relationship and public confidence in the profession, physicians should:

(a) Decline cash gifts in any amount from an entity that has a direct interest in physicians' treatment recommendations.

(b) Decline any gifts for which reciprocity is expected or implied.

(c) Accept an in-kind gift for the physician's practice only when the gift: will directly benefit patients, including patient education; and is of minimal value."

As usual, medical education received major emphasis. Perhaps most prominent was the continued crises in graduate medical education. With increasing numbers of students graduating from allopathic and osteopathic medical schools, the federal cap on graduate medical education positions has resulted in considerable hardship for our students. This year a 1,000 graduating students did not match for residencies, and around 500 students never received a position at all. With a further increase in graduates this year, and with the addition of those graduates from last year who did not match, 2014 could be a disastrous year for our students. To students it seems hypocritical….a shortage of physicians, no more licensed practitioners. The AMA is preparing a report, and will be pressing Congress for prompt action.

There were several resolutions from the Student Section which were adopted regarding curriculum changes in medical school, including the training in medical ethics, in counseling patients in firearm safety, and standardization of rural curricula. An important concern is the diminishing clinical training sites for American students in several states. Off-shore schools have been offering hospitals large amounts of money to take their students, often crowding out U.S.-based students.





Above, Missouri Delegates from left: Drs. Ted Groshong, Lent Johnson, Bill Huffaker, and James Conant. Below, David Barbe, MD, chair of the AMA Board of Trustees, addresses the House of Delegates.

The House overwhelmingly voted to require that all candidates for office file disclosure forms including affiliations and possible conflicts.

Very importantly, the House reaffirmed the use of virtual reference committees before every meeting. This is very significant, in that any AMA member can weigh in on any issue to be before the House, and have those opinions carry the same weight as members actually at the meeting.

With scores of reports and resolutions considered, discussed and passed, your Missouri Delegation was only able to hit what we considered to be the high points of the meeting. We urge all MSMA members to access the AMA webpage for a summary of all the actions of the House of Delegates, and access any reference committee considering issues of importance to members prior to the Annual Meeting in June.

Again this year, Missouri played a major role in AMA leadership. David Barbe, MD, Mountain Grove, is serving this year as Chair of the AMA Board of Trustees, and Ed Cabbabe, MD, St. Louis, is President of the AMA Foundation.

We urge all MSMA members to become involved in these issues by joining the AMA. MM

Interesting Statistics about the U.S. Health Care System

Compiled by HealthReformQuestions.com for the Physicians Health Foundation

- America's infant mortality rate is higher than 47 other countries, according to the U.S. CIA World Fact Book, including many much less developed countries and many countries with government-run health care systems.

- Infant mortality rates can be a poor indicator of the success or failure of the health care system and that America's high infant mortality rate is partially driven by the U.S. commitment to save the smallest newborns.

- U.S. Counts More Babies as Born Alive than other Countries Do: Many babies who are born too premature have little to no hope of living. Yet the United States counts these babies as born alive and therefore as infant deaths, when other developed countries categorize them as "still-born." Analysts estimate that this fact alone could inflate the United States infant mortality rate by 40 percent. (National Institute for Health)

- Demographic factors such as obesity, substance abuse, race, and age contribute to the United States misleadingly high infant mortality rate. For example, teenagers who give birth are more likely to have low-weight babies, who are less likely to survive. The United States has a much higher rate of teenage births than do other OECD countries. (National Bureau of Economic Research and the American Enterprise Institute)

- A study for the National Bureau of Economic Research found that if you control weight at birth alone, the United States has a lower infant mortality rate than does Canada. (National Bureau of Economic Research)

- America ranks 42nd among countries for life expectancy at birth. (MSNBC). But this measure doesn't tell us much about the effectiveness of the U.S. health care system.

- The flaws in infant mortality (discussed previously) also affect the life expectancy numbers.

- Demographic and life style factors (such as obesity, incidents of smoking) also have a profound effect on a population's life expectancy, and have little reflection on the effectiveness of the health care system.

- The United States also has a much higher rate of death due to accidents and crime than other developed countries, which reduces the average U.S. life expectancy. This is a serious problem on its own, but it is largely unrelated to the quality of our health care system.

- A better assessment of a health care system's effectiveness is how it addresses actual illnesses.

- The United States is ranked #1 in the world for "responsiveness to the needs and choices of the individual patient" (World Health Organization)

- The United States has the highest survival rate of any OECD country? (Forbes and the Lancet Oncology Journal)

- The United States leads the world in new medical innovations.

- A 2009 study shows American scientists won the Nobel Prize in 33 out of the previous 40 years, whereas scientists from the entire rest of the world won it in only 25 out of those 40 years (often it was shared between Americans and non-Americans). Additionally, of the top 27 drugs and devices, U.S. physicians, companies, and scientists had a hand in developing 20 of them, whereas European physicians, companies and scientists only had a hand in 14. (Cato Institute)

- This means that even the health care that patients are getting in Canada, Europe, Australia, and other places is partly due to the creative capacities of the U.S. health care system.

- Americans actually report significantly shorter waiting times than patients in other countries?

- Just five percent of Americans report having to wait more than four months for elective surgery, compared to Australia (23 percent), Canada (27 percent), New Zealand (26 percent) and the United Kingdom (38 percent). (OECD report)

- Americans had more access to new cancer fighting drugs than Canadians or Europeans because of their longer approval process. In some cases, it took Canada more than 180 days longer to green light a new cancer treatment than in the U.S. (Fraser Institute)

- Canadians periodically have to turn to the United States for the use of their highly specialized medical facilities. For example, in 2007, a woman from Calgary, Canada had to be flown to Montana to deliver quadruplets, because there were no adequate neonatal facilities available. Similarly women from Alberta, Canada had to be transferred to Montana to deliver babies because of a shortage of neonatal facilities. (CBC News)

- The United States spends more than any other country in the world on health care and more Americans worry about the cost of medical care than other countries. Yet did you know that there many reasons why the U.S. spends more, and that some of those are because of government policies that drive up costs?

- The United States develops most new health care techniques and treatments, and makes use of these new innovations to try to save lives that other countries might deem hopeless. As described previously, babies born prematurely receive extensive—and expensive—treatment protocols. These extreme measures can be costly. (American Enterprise Institute).

- Most working age Americans obtain health insurance through their employers. They do not pay directly for health services, and they don't even directly choose their health insurance provider. This means that many Americans have no reason to consider cost when making health care decisions, which encourages overconsumption and makes it possible for health service providers to charge higher prices. (Health Affairs and Forbes).

- The federal government runs Medicare and Medicaid, two expensive government insurance programs that cover about 30 percent of the Americans (The Henry J. Kaiser Family Foundation). The way these programs are operated has a profound effect on the private market.

- Governments require insurers to include more and more treatments and services in our insurance policies. This encourages over-consumption of some procedures, and means that we are paying to finance many treatments that we may not want, need, or use. State and federal mandates raise health insurance premiums by between 10 and 50 percent. (Council for Affordable Health Insurance)

- Hospitals and doctors fear costly medical malpractice suits so carry insurance and issuing unnecessary tests to minimize the potential for lawsuits. . These push our overall health care spending higher, and affect the insurance prices for all Americans. Analysts estimate that the medical malpractice increase health care costs by between 7.2 and 12.7 percent. (Heartland Institute and Pacific Research Institute)

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The Current State of ICD-10 & Preparing for It

by David O. Barbe, MD, Mari Savickis & Nancy Spector

ICD-9 codes, and the transactions using them, e.g., claims, eligibility request, etc., will be rejected after October 1, 2014.



David O. Barbe, MD, MHA, MSMA member since 1985, is Chair of the AMA Board of Trustees and a family physician from Mountain Grove, Mo. Mari Savickis is the AMA Assistant Director of Federal Affairs. Nancy Spector is the AMA Director of Electronic Medical Systems.
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ICD-10 has garnered a great deal attention in the last few years with much of the focus being on the good, the bad, and the absurd. Just mentioning ICD-10 can raise a level of reaction in people not typically seen for something like diagnosis coding. The American Medical Association (AMA) has been a vocal opponent of ICD-10 because of its burden and cost for practicing physicians to implement. While the AMA has been able to successfully keep this change at bay for more than a decade, the federal government has made it clear the new codes will be required for use starting October 1, 2014. Therefore, it is important that physicians begin preparing now for this change.

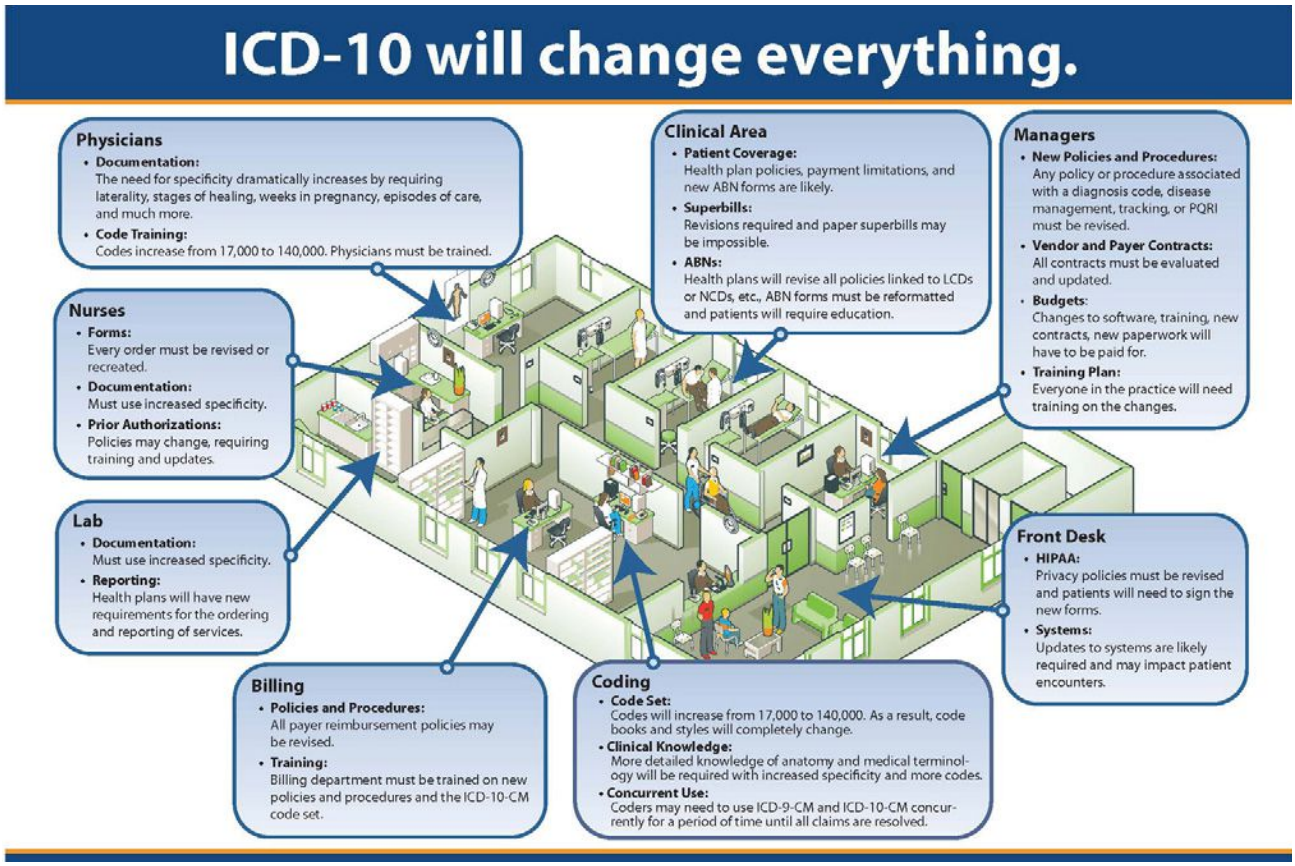
Within "ICD-10", the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) is the diagnosis code set and the International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) is the procedure code set for inpatient procedures. The Current Procedural Terminology (CPT®) and Healthcare Common Procedure Coding System (HCPCS) code sets are used today for reporting ambulatory procedures and will continue to be used as they are today with the implementation of ICD-10-PCS. This article will refer only to the ICD-10 diagnosis code set.

ICD-10 & AMA's Advocacy Against It

Work on bringing forward ICD-10 began in the early 2000s. Since 2002, the AMA has fought against the move to ICD-10 on many fronts including testifying at a key federal advisory body known as the National Committee on Vital and Health Statistics (NCVHS), sending letters to the Department of Health and Human Services (HHS), sending letters to Congress, and testifying at the ICD-9 Coordination and Maintenance Committee. In addition, the AMA has had several meetings with key Administration officials.

On January 16, 2009, HHS published the regulation requiring the replacement of the ICD-9 code set with ICD-10 as of October 1, 2013. Initially, the proposed rule called for a compliance date of October 1, 2011. The AMA, along with over 100 physician state and specialty societies, expressed their deep concerns in comments to HHS on the aggressive deadline to complete this complex transition in such a short amount of time, which resulted in the first delay until October 1, 2013.

While the AMA's policy, adopted by our House of Delegates, against ICD-10 dates back to 2006, the more active policy is from November 2011 and has been amended in 2012 and 2013. This policy calls for the AMA



Source: American Academy of Professional Coders

to "vigorously work to stop the implementation of ICD-10" and "evaluate the feasibility of moving from ICD-9 to ICD-11 as an alternative to ICD-10."

In February 2012, following strong advocacy from the AMA, HHS announced it was considering delaying the compliance date. On September 5, 2012, HHS finalized a second delay of one year to October 1, 2014. At this time, all encounters and discharges on or after October 1, 2014 must use ICD-10 codes. ICD-9 codes, and the transactions using them, e.g., claims, eligibility request, etc., will be rejected after this date.

At the AMA's Annual Meeting in June 2013, a report was brought forward evaluating the feasibility of waiting for ICD-11 instead of implementing ICD-10. ICD-11 is under development and will be brought to the World Health Organization (WHO), the developer of the international code set, for consideration in May 2015. ICD-11 will build on the changes in ICD-10 and will introduce a multi-axial framework with linkages among the diagnostic concepts. The AMA's report concluded that skipping ICD-10 and moving straight to ICD-11 was not recommended due to a number of uncertainties and greater complexities around its use, especially the impact on physicians who are paper-based. This report, however, was referred back to the AMA Board for further analysis.

A new policy was also adopted at the 2013 Annual Meeting. The policy calls for the AMA to support a mandate for a two-year "implementation" period during which time payers will not be allowed to deny or recoup payment based on the specificity of the ICD-10 code used.

Currently, the AMA is supporting two pieces of legislation introduced in Congress that would halt the ICD-10 implementation, Senator Coburn's bill (S972) and Representative Poe's bill (HR1701). Efforts also continue with engaging the Centers for Medicare & Medicaid Services (CMS), the agency under HHS with oversight of the ICD-10 mandate, on the ongoing concerns about the burden of ICD-10 at a time when physicians are being confronted with a variety of reporting programs that if not successful, will result in significant penalties.

The implementation of ICD-10 is a divisive issue for the industry. While many physicians have concerns about the costs and burden of ICD-10, there are many other stakeholders, including government agencies, researchers, large payers, large health system providers, and public health entities, that support the conversion. Stakeholders have already invested millions towards the adoption of ICD-10.

Despite the hard work by the AMA, the adoption of ICD-10 remains a regulatory mandate. The AMA will continue to support the Congressional bills and advocate to stop the implementation of ICD-10, but physicians also need to be realistic that they need to be prepared for ICD-10 in case it is not stopped or further delayed. Failure to be ready for ICD-10 puts all physician reimbursement at risk.

Preparing for ICD-10

Basics on ICD-10 Diagnosis Codes

ICD-10 addresses several issues that exist today with the ICD-9 diagnosis code set, including:

- lack of specificity of the information conveyed in the code, at times;
- use of outdated medical concepts and terminology;
- lack of laterality to identify side of body; and
- inability to further expand codes in diagnosis chapters, which has resulted in new codes being assigned in unrelated chapters.

Table 1 shows the differences between the ICD-9 and ICD-10 diagnosis code sets.

The expanded number of characters of the ICD-10 diagnosis codes allows for a greater level of detail in the code to identify disease etiology, anatomic site, and severity, as seen in this example:

...S52 Fracture of forearm
.....S52.5 Fracture of lower end of radius
.....S52.52 Torus fracture of lower end of radius
.....S52.521 Torus fracture of lower end of right radius
.....S52.521A Torus fracture of lower end of right radius, initial encounter for closed fracture

Overall, the increased specificity of the ICD-10 codes is more flexible, which means that emerging diseases can be quickly incorporated. The higher level of detail in the codes provides the ability to more precisely code the diagnosis. As with ICD-9, ICD-10 codes are to be reported at the highest level of detail possible. ICD-10 reflects advances in medicine and medical technology making the code set more relevant to today's understanding of diagnoses. ICD-10 also provides an improved ability to measure health care services and conduct public health surveillance.

Table 1
Comparison of Diagnosis Code Sets

ICD-9	ICD-10
3-5 characters in length	3-7 characters in length
Approximately 13,000 codes	Approximately 68,000 codes
First digit may be alpha (E or V) or numeric; digits 2-5 are numeric	Digit 1 is alpha; digits 2 and 3 are numeric; digits 4-7 are alpha or numeric
Limited space for adding new codes	Flexible for adding new codes
Less detailed information in codes	More specific information in codes
Lacks laterality	Has laterality (i.e., codes identifying right vs. left)

Implementation Activities

Physician practices should already be working through their project plans for the implementation of ICD-10. The following activities provide an overview of the work that needs to be done to successfully implement ICD-10. Some of the work can be done simultaneously and the amount of time it will take to complete each step will depend on the practice's resources, scope of work, and business processes.

1. Conduct a Practice Assessment

Completing a practice assessment will identify what areas need to be updated for ICD-10. Consider the following when completing the assessment:

- Identify all current work procedures used today with ICD-9, e.g., checking eligibility, public health reporting, quality reporting, etc.
- Identify all computer systems used today with ICD-9, e.g., practice management system, electronic health record, disease registry, etc.
- Identify all staff who use ICD-9 and what their role is
- Identify all forms that are used with ICD-9, e.g., encounter form, "superbills," etc.
- Identify any current coding support tools used for ICD-9

2. Contact System Vendors

Most practices will need to have some type of system update by their vendor in order to support ICD-10. The two biggest systems impacted will be the practice management system and the electronic health record. Other computer systems used in the practice that may be impacted include a disease management registry, e-prescribing module, and code selection software.

The following is information to obtain from the vendor:

- If the system will be updated, since some systems may be too old or no longer supported by the vendor.
- The timing of the installation of the updates.
- Any charges for the updates to the system.
- Any testing that will be completed by the vendor to demonstrate the updates are functioning.
- Any additional services or products to support ICD-10.

3. Complete a Documentation Assessment

Because of the greater specificity in the ICD-10 codes, clinical documentation may need to be improved to better capture all of the concepts that are needed in order to choose the best diagnosis code. Despite concerns that documentation will become more cumbersome for ICD-10, practices may find that their current documentation is adequate. For example, ICD-10 pregnancy codes are broken down into trimesters, which is already in the documentation.

To do a documentation assessment, practices should look at their high frequency diagnosis codes under ICD-9 and determine what those codes will be in ICD-10. There are resources today that provide mappings of the ICD-9 codes to ICD-10 codes. The practice can then take their current documentation and determine if all of the necessary information is present to allow for choosing the most detailed ICD-10 code.

Better documentation will benefit the practice today with ICD-9 coding, since reporting the most specific code may result in fewer denied or pended claims. In addition, practices will find that better documentation will support them when completing quality reporting and in the event of an audit. It also may reduce the need for additional information requests from payers.

4. Contact Clearinghouse and/or Billing Service

Practices that use a clearinghouse and/or billing service need to contact them about their implementation of ICD-10 and any impact it may have on the practice's usual claims submission process. The practice will need to know if the clearinghouse and/or billing service will be doing any testing with them and if so, when it will be done.

5. Contact Payers

During the implementation of ICD-10, payers will be reviewing their medical policies and may make changes to their benefit coverage and reimbursement that is triggered by the diagnosis code. Practices should talk to their priority payers about any changes they will be making to their benefit coverage or reimbursement and when their updated policies will be available for review.

6. Undergo Installation of System Upgrades

The vendor will complete the system upgrades and any testing that they will perform.

7. Update Internal Work Procedures

Any updates to internal procedures used to support coding needs will need to be completed, such as "superbills", quality data collection forms, public health data collection forms, etc.

8. Complete Testing of Systems

Testing of the systems has two parts. The first is internal testing within the practice to ensure that the systems are working properly and can generate the necessary administrative transactions and reports for ICD-10, which the vendor might do. The second phase of testing is external with the clearinghouse, billing service, and payers. External testing involves sending test transactions, e.g., claim, eligibility request, etc., to confirm that the other organization can receive the transaction and process it correctly. Full "end-to-end" testing will include the other organization sending the response transaction back so the practice can confirm it can receive it.

9. Complete Staff Training

Most staff within the practice will need to be trained on ICD-10. The level of training will depend on the role of the person and what their interaction is with diagnosis codes. Clinical staff will need to understand how their documentation will impact the ability to identify the correct diagnosis code. Coding staff will need the most intensive training. Practices will need to determine the best method of training for their staff.

10. Monitor Data Post-Implementation

Before the switch to ICD-10, practices should consider monitoring specific data related to the

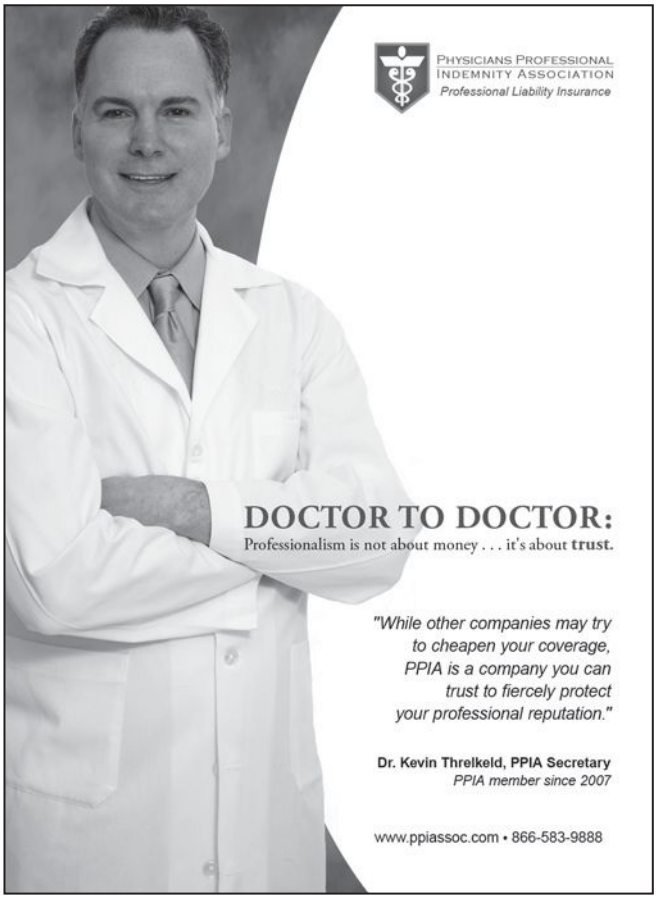
ICD-10 Resources

Detailed information on ICD-10 is available through the following resources. State and specialty medical societies may also provide additional resources.

Organization	Website
AMA Web site	www.ama-assn.org/go/icd-10 These resources are free and include fact sheets, articles, and implementation tools.
AMA Bookstore	https://commerce.ama-assn.org/store/search/searchResults.jsp?search=ICD-10 There is a charge for these resources, which include ICD-10 coding workshops, webinars, books, and specialty specific coding cards.
National Center for Health Statistics (NCHS)	www.cdc.gov/nchs/icd/icd10cm.htm NCHS develops and maintains the ICD-10 diagnosis code set. ICD-10 diagnosis code set files are available for free on their Web site, along with the General Equivalency Mappings (GEMs) that map the ICD-9 codes to the ICD-10 codes.
Centers for Medicare & Medicaid Services (CMS)	www.cms.gov/Medicare/Coding/ICD10/index.html CMS has many free resources available on its Web site, including implementation guides, checklists, timelines, frequently asked questions, and recorded webinars.

processing of claims. Collecting baseline data before the switch to ICD-10 will allow the practice to compare the performance of transactions and reimbursement under ICD-10. The following are specific data that the practice can track:

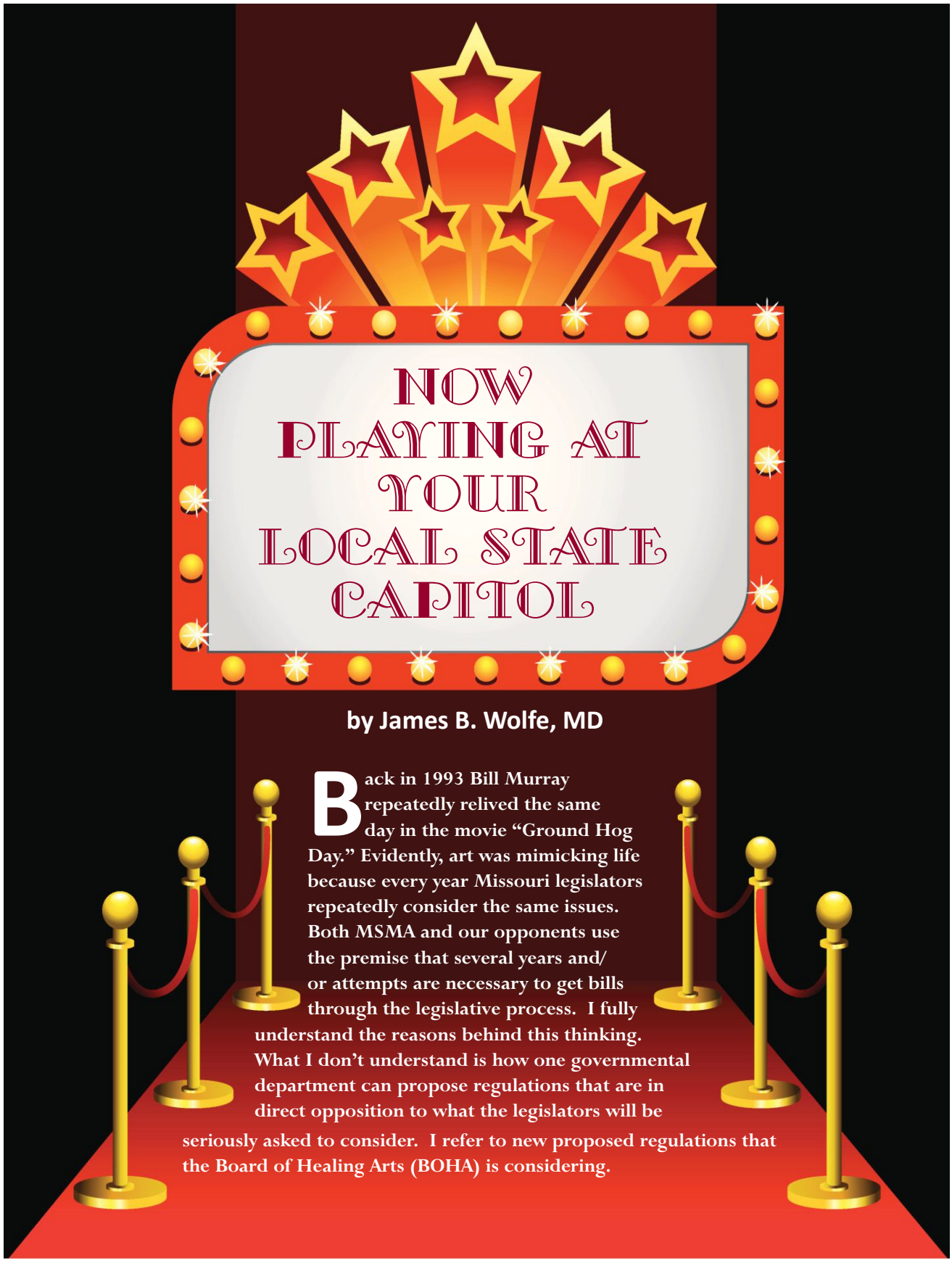
- Number of pended claims for additional information related to diagnosis
- Number of denied claims related to diagnosis coding
- Average reimbursement for specific priority (high volume or high dollar) services performed
- Overall account receivables
- Number of other transactions (eligibility, prior authorization) that include diagnosis codes pended or denied



The transition to ICD-10 will take time and resources. Practices need to, if they have not already, assess the impact ICD-10 will have and the amount of work needed to prepare for it. Good planning will ease the implementation disruptions as much as possible.

Summary

The AMA continues to harbor serious concerns and reservations with the significant burden of the ICD-10 mandate and continues to convey these points to policymakers in Washington. The AMA is well aware of the concerns of physicians related to the growing number of burdens being placed on their practices, of which ICD-10 is a large one, and continues to advocate for overall regulatory relief. While the AMA has been working for many years to hold back the implementation of ICD-10, at this time, it does remain a regulatory mandate. Because of this, it is important that physicians prepare for its implementation in order to avoid the rejection of claims and cash flow interruptions. MM



NOW PLAYING AT YOUR LOCAL STATE CAPITOL

by James B. Wolfe, MD

Back in 1993 Bill Murray repeatedly relived the same day in the movie "Ground Hog Day." Evidently, art was mimicking life because every year Missouri legislators repeatedly consider the same issues. Both MSMA and our opponents use the premise that several years and/or attempts are necessary to get bills through the legislative process. I fully understand the reasons behind this thinking. What I don't understand is how one governmental department can propose regulations that are in direct opposition to what the legislators will be seriously asked to consider. I refer to new proposed regulations that the Board of Healing Arts (BOHA) is considering.

Just last month the Board notified MSMA that is was considering a revision to the requirements to obtain a Missouri medical license. Under the new requirement a physician would need to have completed three years of post-graduate training instead of the present one year. Evidently, some of the residency training program directors have requested this change to prevent junior residents from "moonlighting" outside of the training facility. According to ACGME Program Requirements Article VI.G.1 residents are restricted to an 80-hour work week averaged over a four-week period. Internal and external moonlighting hours are included in the 80-hour work week. PGY-1 residents are restricted from any moonlighting at all. Thus, the proposed regulations affect only the PGY-2 and 3 residents. Given that the mission of the BOHA is "to protect the citizens of the state through the licensing of physicians and other health designated professionals, assessing their competence to practice and their moral character," the question then becomes: why is the Board considering the program directors' request? It is the responsibility of the program directors to monitor their resident's weekly work history, not the BOHA. Obviously, the issue has two sides.

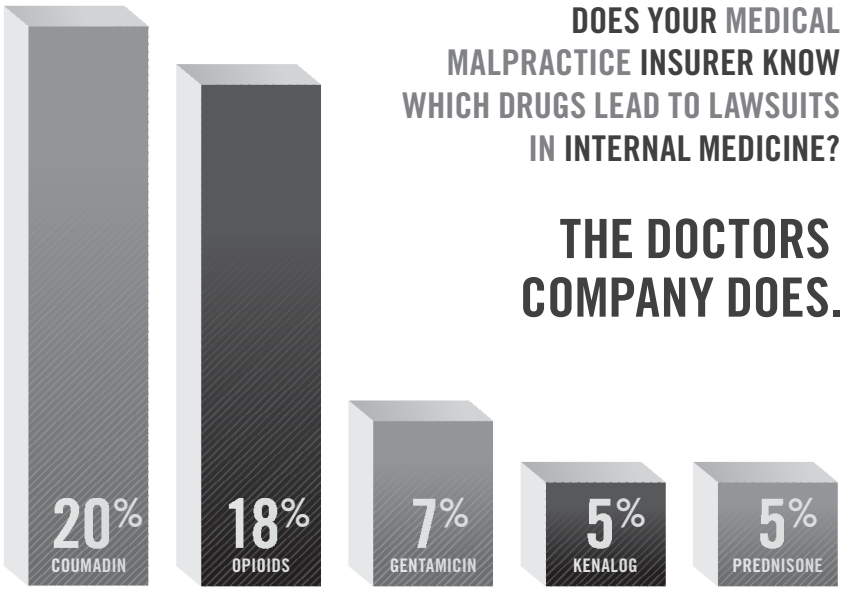
PRO

- There are no residency programs with less than three years of post MD training.
- Two states (Nevada and South Dakota) have had the three-year post-graduate training requirement for many years. Thirteen states presently have a two-year post-graduate training requirement. The remaining 35 states are like Missouri, requiring only one year.

CON

- Many smaller hospital emergency rooms rely heavily on the moonlighting residents for coverage.
- Unless this proposed regulation grandfathered all presently practicing physicians it would restrict the potential inflow of some physicians.
- This will restrict the number of independent practicing physicians in Missouri at the very time demand is going to accelerate substantially because of baby boomers and Accountable Care Act. This shortfall in manpower will be used by the nurse practitioners (and the federal government) to push our state legislators to pass independent practice legislation for the nurse practitioners.

I find it ironic that at the same time the BOHA is seriously considering increasing the training requirements for physician licensure our state legislators will once again be asked to consider allowing nurse practitioners independent practice privileges. Presently nurse practitioners can have as few as 540 hours of clinical training; contrast that to the 12,480 hours that the BOHA is proposing for physician licensure. If both physicians and nurse practitioners are legislatively provided



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the same privileges with such vast differences in training requirements one has to come to one of several conclusions:

1. The clinical experience of nurse practitioners is vastly superior to physicians which allows them to be trained in one-twenty-third as much time. If that were the case don't you think that the physician training programs would take note and copy the model?
2. Physicians are way over-trained. Is that why the American Board of Obstetrics and Gynecology now requires a six-year Maintenance of Certification requirement that not only requires a written test exam but ongoing annual reviews. I understand that other Boards are beginning to emulate these requirements.
3. Nurse practitioners are woefully under-trained to practice independently. According to Kleinpell, Longitudinal Survey of ACNPs www.nursinglibrary.org, 46% of graduating NPs felt their program had prepared them only fairly well or not at all for independent primary care. Additionally, 70% felt ill-prepared for x-ray interpretation and 46% felt ill-prepared in pharmacology (their online studies could have included as little as three credit hours or 45 CEUs in five years). Hart & Macnee, American Journal of Nurse Practitioners, 2007, stated that "respondents indicated that they desired and needed more out of their clinical education, in terms of content, clinical experience, and competency testing."

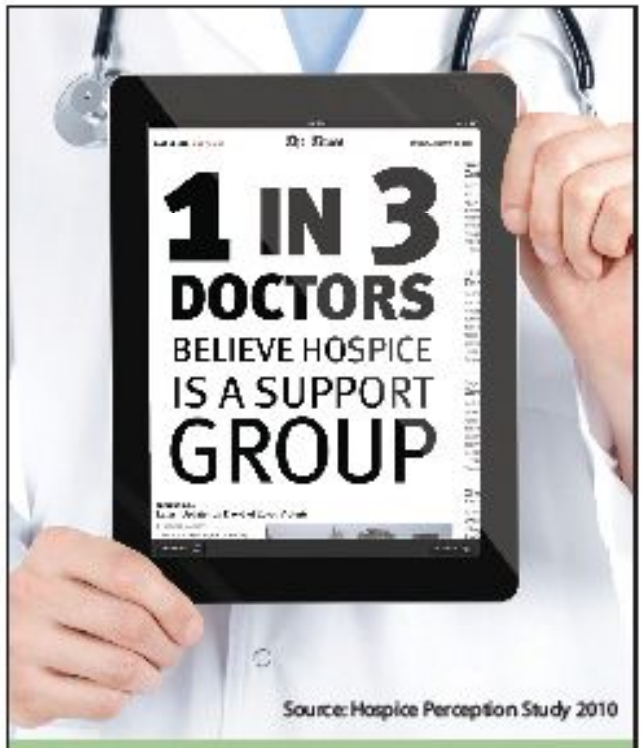
For a moment, let us look at some of the unintended consequences of allowing independent practice for nurse practitioners at the same time we have made board certification a prerequisite for hospital staff privileges (which is not uncommon in Missouri hospitals). Let us assume that an OB-GYN physician loses his board certification for whatever reason. He would also loss his staff privileges. Here is where everything becomes topsy-turvy as in Alice in Wonderland. Because nurse practitioners wouldn't have board certification requirements for staff privileges, the hospital would have a much less qualified practitioner providing care to previous patients of a more experienced individual. The same scenario could occur with Family Practice, Internal Medicine, or even Cardiology, since all utilize nurse practitioners presently.

To avoid being misunderstood, let me state categorically that I am in favor of continual life-long learning. I am, however, not in favor of a legislative piecemeal approach to privilege-granting because of the unintended consequences that would follow.

As always, MSMA will be in the forefront of issues that are vital to Missouri physicians and their patients. I would hope that all of you would join me in fighting any expansion of nurse practitioners scope of practice legislatively. The last thing Missouri patients need is a "dumbing" down of the health care profession. MM



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We Can Do Better Than Work Restrictions

by Nathanial S. Nolan

The 2011 restrictions made things worse rather than better. Residents reported lower survey scores of well-being and higher survey scores for stress.

"The hardest conviction to get in the mind of a beginner is that the education upon which he is engaged is not a college course, not a medical course, but a life course, for which the work of a few years under teachers is but a preparation."

-Sir William Osler

When Osler started the first residency at Johns Hopkins, it was customary for resident doctors to live in the hospital. In fact, this is where the term "resident" came from. These young physicians were also called the "house staff," a term coined because the hospital was their house, so to speak. But gone are the days of Osler, which have given way to an era where students speak of medicine as a job rather than a profession. Hour restrictions have been implemented so that patients are safer and students have a more reasonable lifestyle. Only this hasn't panned out very well. Once our residents quit being "residents of the hospital," the threat to patients actually increased and student morale decreased.

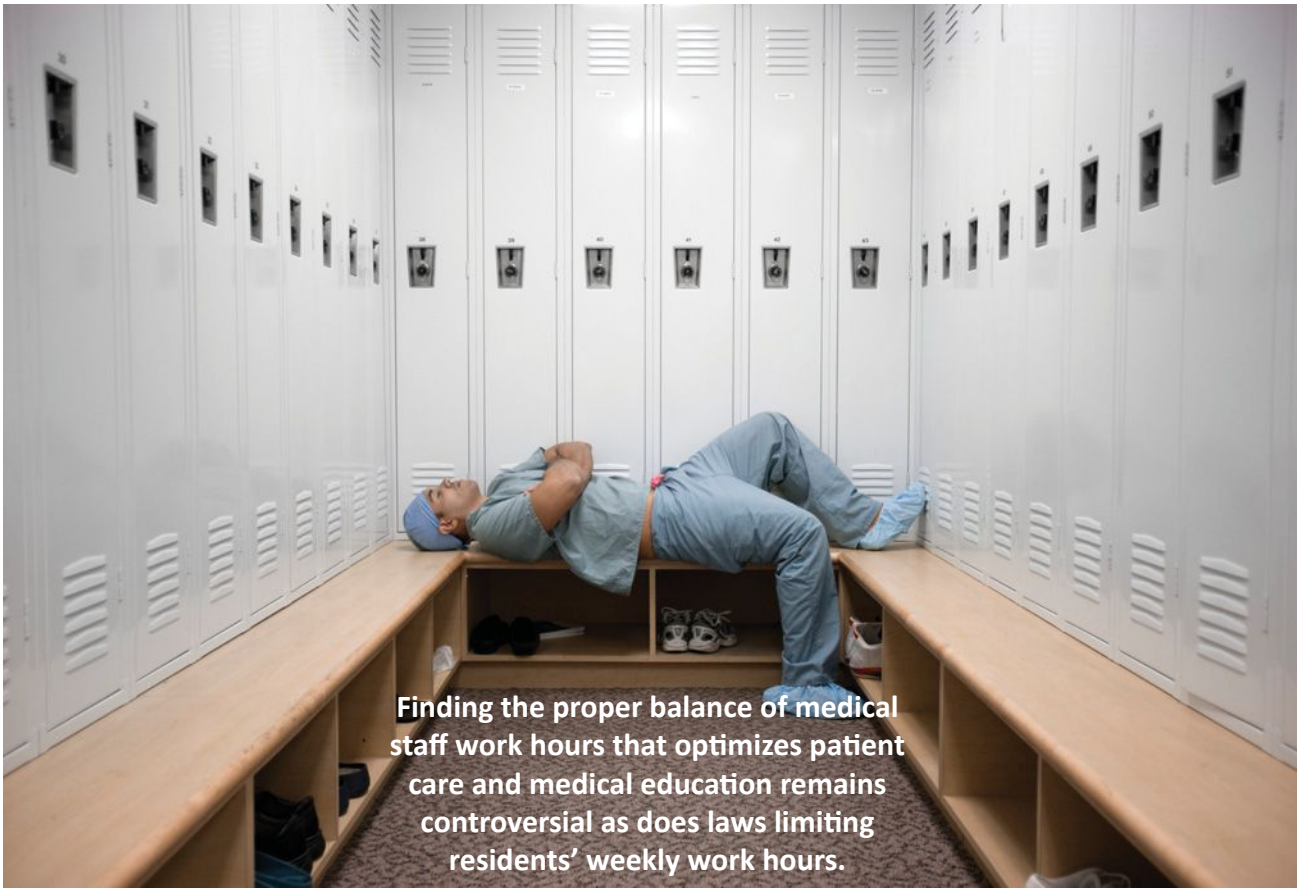
Due to mounting pressure over the last decade, the Accreditation Council for Graduate Medical Education (ACGME) has been placing tighter restrictions on the amount of hours that medical residents are allowed to work.[1] At the turn of the century, reports from the Institute of Medicine (IOM) highlighted the staggering number of deaths attributed to medical errors. Specifically, the report *To Err is Human* suggested that up to 98,000 Americans die each year due to preventable medical errors.[2] This prompted a reform in resident work hours in 2003, and a second reform in 2011. Current work restrictions, based on 2008 IOM recommendations, are 80 hours per week averaged over four weeks. First-year residents are limited to shifts of no more than 16 hours, with all other residents able to work 24 hours in a row.

Initial reports from residents, following the 2003 implementation of work hour restrictions, suggested an improved quality of life. However, they also suggested that their education was suffering, and that a decreased continuity with patients may actually increase errors.[3] The 2011 restrictions apparently made things worse rather than better. Residents reported lower survey scores of well-being and higher survey scores for stress. A study of pediatric residents demonstrated that they experienced severe work compression. They had the same patient load, but fewer hours to see patients.[4] This was echoed in a study on medical interns.[5] There was also a notable impact on attending physicians, giving them fewer hours in which to teach residents and increasing their own patient load.[6]

There is also worry that surgery residents may not be gaining enough procedural experience. To become a proficient surgeon, students need



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Finding the proper balance of medical staff work hours that optimizes patient care and medical education remains controversial as does laws limiting residents' weekly work hours.

to repeat procedures over and over. This allows them to see differences in anatomy and handle a wide array of surgical complications so that, when they do not have a supervising physician, they can adequately lead a team. However, according to multiple studies, the reduction in resident work hours has led to less time for students to be in surgery.[7, 8] Surgical interns report less time with patients, higher rates of burnout and frequent thoughts of quitting surgery.[9]

Several initial studies of the 2003 changes demonstrated that the restrictions allowed for minor improvements in patient outcomes. While no significant benefit or worsening was found in one study,[10] some small benefits were found in others.[11,12] For example, one medical center saw a reduction in usage of its intensive care unit and fewer interventions by pharmacists over medication errors. However, the decrease in interventions was only two per one hundred, and they saw no difference in readmission rates, adverse drug-drug interactions, length of hospital stay or other outcome measurements.[11] Another study found a reduction in mortality rate of 0.25%, which is not much, but is statistically significant.[12] More importantly, for people in that small percentage, any improvement matters. Even if residents felt more stress, the argument could be made that work hour restrictions are necessary if it improves patient care.

Further studies of the 2011 restrictions offered a bleaker picture. A troubling outcome from these reforms was published just this year in the *Journal of the American Medical Association*. A longitudinal study that compared data from prior to the 2011 changes showed that interns reported more medical errors after the restriction.[13] How could this be? How could regulations designed to help residents and patients potentially harm both?

This problem results from a combination of factors. We currently have a shortage of resident physician positions, even though we have an growing supply of medical students – an issue pointed out in a previous issue of *Missouri Medicine*.[14] Meanwhile, we have an increasing burden on the health care system as baby boomers age and become eligible for Medicare. This equates to more work per physician – including, or perhaps specifically, residents. Many of the community teaching hospitals rely on a resident work force to take care of their patient populations, particularly Medicare and Medicaid patients. While adding more work to our junior physicians' plates,

we have also reduced the hours they have to do that work. They are studying less, spending less time in educational events[15] and lying on their time sheets[16] just to be able to satisfy their patient care requirements.

There is also a reduction in the amount of time actually spent with patients. A 2011 study reported that as duty hour restrictions have been put in place, students have spent less time with patients.[17] When you give someone a set number of hours, there is only so many ways they can divide it. Concerns have also been voiced over the increased number of patient hand-offs that occur when shifts are shorter. Anytime a patient is handed-off to a new provider, there is a chance of misinformation. Multiply this by the fact that each shift change involves the transfer of many patients. An intern, rushed for time, may hand-off multiple patients forgetting to tell the incoming team that the patient in room 301 just got her medications but he/she hadn't had time to chart it. This could lead to a disastrous outcome, and may be the reason for the increased rate of errors.

The answer to this problem is not an easy one. Do we limit the amount of patients that residents can see? This would surely reduce the amount of work compression they feel. It would also reduce the amount of learning. Medical education is built upon experience. Only after doctors have seen a thousand colds can they look at a patient and think, "this isn't a typical cold." Diagnostics is an art that can't be mastered by reading a book. To again borrow from Osler, "to study the phenomena of disease without books is to sail an uncharted sea, while to study disease without patients is not to go to sea at all."

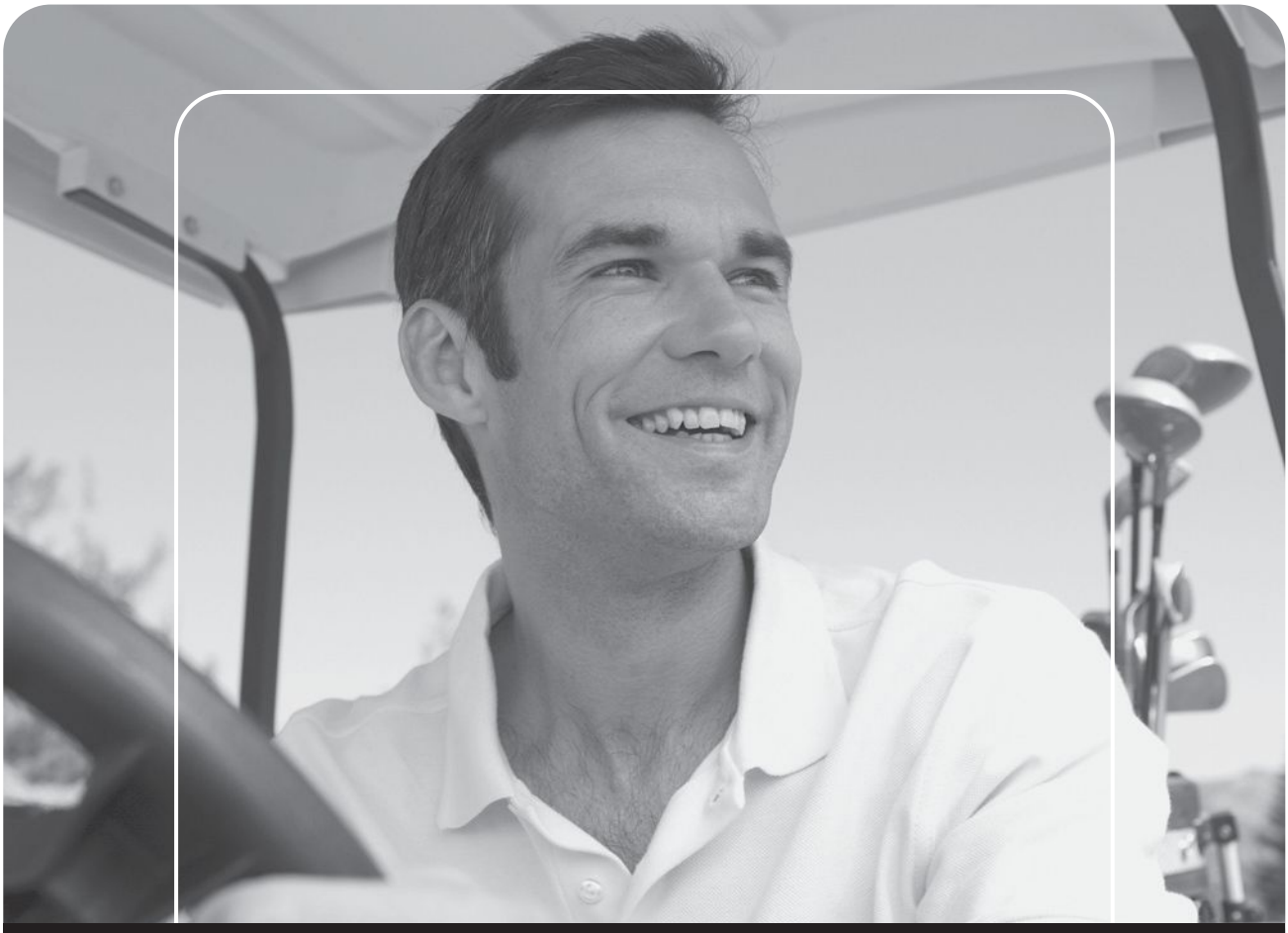
The solution may lie with transparency. The more that we publish our mistakes, the more we are able to learn from them. There are also direct repercussions for the quality of care you provide – hospitals are incentivized to reduce mistakes if their error rate is published regularly. This would allow residencies to police their own residents rather than assuming one rule will work for every training center. Hospitals have completely different shift schedules, overnight support, populations, numbers of residents, etc. The shift schedules and work limits that work for one hospital may be extremely detrimental to another.

Medical education should be evidenced-based, like the treatments prescribed to patients. If studies were published showing that a drug did not work, it would not be prescribed (ideally). A decade after we started this regulatory experiment, we are seeing that the prescription isn't working. It's time to lose the national regulations and let hospitals regulate themselves. As a replacement, academic hospitals should be forced to publicly release their error rates. This serves as a monumental teaching opportunity and allows for rapid feedback and adjustments. The fine-tuning of hospital-regulated shift length and work restrictions would allow for multiple experiments to happen simultaneously. As one institution finds success, other institutions are likely to adopt their method as they also vie to reduce their own error rates.

We may not need students to live at the hospital in order to make them good doctors. But forcing them to stay away from it seems worse. Osler thought medical education was but a preparation for life. I can think of no better preparation than demonstrating to residents the importance of patient safety.

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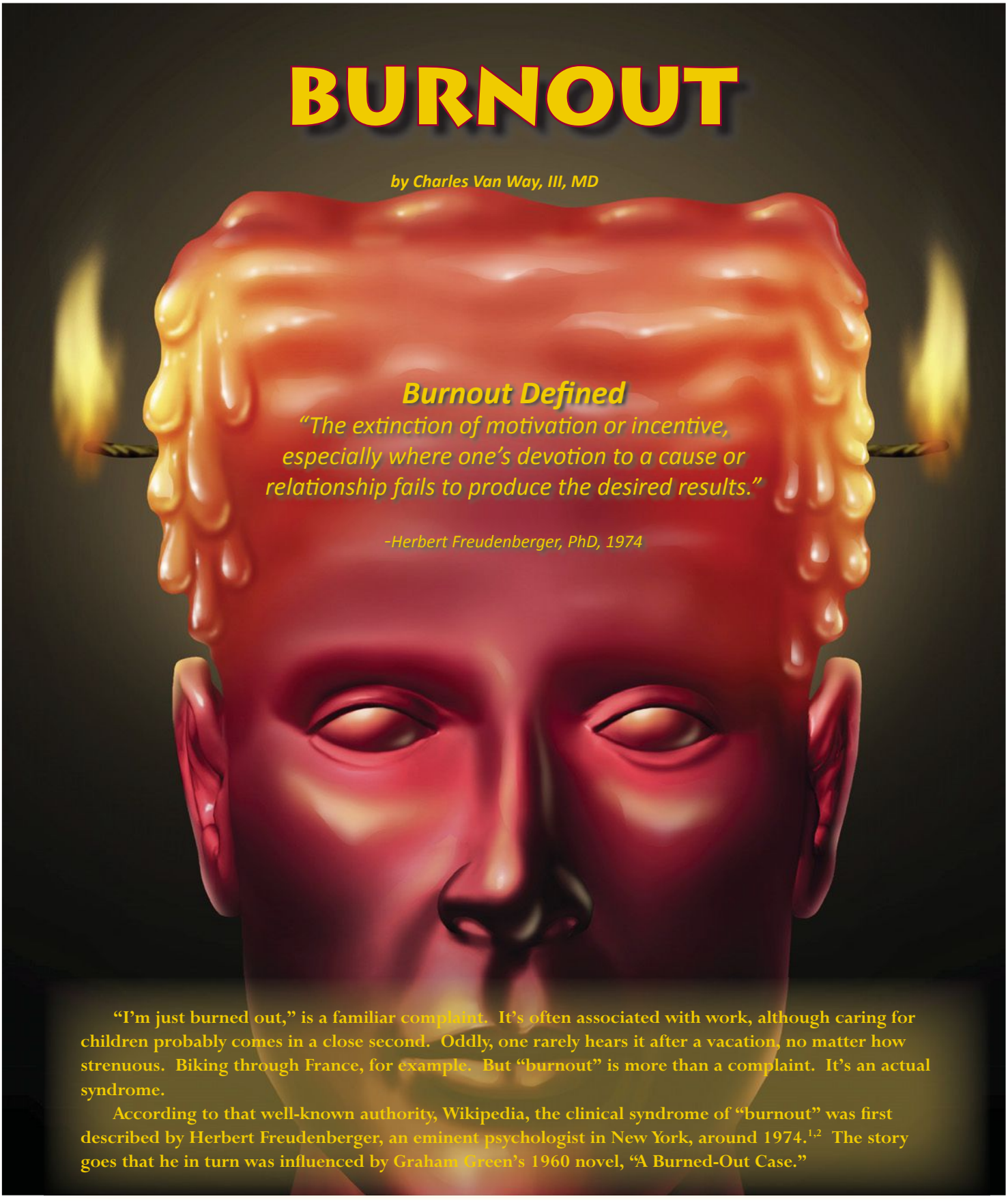
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BURNOUT

by Charles Van Way, III, MD



Burnout Defined

"The extinction of motivation or incentive, especially where one's devotion to a cause or relationship fails to produce the desired results."

-Herbert Freudenberger, PhD, 1974

"I'm just burned out," is a familiar complaint. It's often associated with work, although caring for children probably comes in a close second. Oddly, one rarely hears it after a vacation, no matter how strenuous. Biking through France, for example. But "burnout" is more than a complaint. It's an actual syndrome.

According to that well-known authority, Wikipedia, the clinical syndrome of "burnout" was first described by Herbert Freudenberger, an eminent psychologist in New York, around 1974.[1,2] The story goes that he in turn was influenced by Graham Green's 1960 novel, "A Burned-Out Case."

While Mr. Green's protagonist was an architect, the syndrome has come to be associated in the popular mind with professions dealing with people, such as teachers, nurses, and, most prominently, physicians. Indeed, the Wikipedia article even states that general practitioners are the most likely to exhibit burnout, with 40% showing the syndrome.

Is this true? Are we physicians particularly prone to the ailment? Well, yes. An article by Shanafelt, et al., in the *Archives of Internal Medicine*, reported on a survey of 7,300 physicians given the Maslach Burnout Inventory.[3] Yes, there's a standard psychological test for it. Don't tell me you're surprised at that. Anyway, this sample showed 46% of physicians showed at least one symptom, with the highest rates being – you guessed it – family medicine, general internal medicine, and emergency medicine. It's a disease of the front line of medicine. Comparing docs with the general public, we were more burned out (38% to 28%), and more dissatisfied with balance between work and life (40% vs. 23%). We were more burned out than people with high school diplomas, bachelor's or master's degrees, or even other doctoral degrees. Symptoms of depression were found in 40% of us.

An online survey done by Medquest had responses from 24,000 physicians, using a much simpler survey, but had similar findings.[4] Women were somewhat more likely to be burned out than men, and physicians from 46-55 more likely than those older or younger. Interestingly, immigrant physicians were significantly less likely to be burned out than native citizens.

So what does this mean? Symptoms – really attitudes – reported in the Medquest study were loss of enthusiasm for work, feelings of cynicism, and a low sense of personal accomplishment. One might quibble with these. Personally, I was born cynical, although I tend to call it "realistic." Perhaps it's a matter of degree. Shanafelt, consistent with the Maslach classification, emphasized emotional exhaustion, depersonalization, and low sense of personal accomplishment. Those are harder to define, but probably more precise. The thing is, we all know people we would describe as "burned out." Even though we might not be able to hang an ICD code to it (Z73.0, ICD-10, if you're interested), we can recognize it.

So, why? Why are more than one-third of physicians exhibiting burnout? On the face of it, we have it made. We do interesting work, which we have ourselves chosen to do, and we're well-paid for it. We can change jobs pretty much at will. We have more control over our time and working conditions than most people. We have a high degree of respect from the people we serve. Only nurses rank higher in the public esteem. Actually, they get burnout too, but that's another discussion.

The Medquest study addressed this question, asking to rank a number of alternative reasons. The highest rank overall was "too many bureaucratic tasks." Others in the top five were "too many hours at work," "feeling like a cog in a wheel," and "income not high enough." Surprisingly, "impact of Affordable Care Act" was number three. One can suppose that any change produces stress. But, really? You're burned out over Obamacare? The use of EMRs wasn't listed in the alternatives offered, which is probably a good thing for the self-respect of the EMR industry. Assuming it has any.

Maybe it's not just us. "Lawyer burnout" had 980,000 hits on Google. There were many blogs and articles discussing burnout, which seems to be a real problem for lawyers. And then, "teacher burnout" had 3,750,000 hits. "Nurse burnout" had 2,190,000. "Physician burnout" had a mere 760,000. So it's not just us. But in this case, misery very much does not love company. And in any case, our responsibility is to our profession. What should we be doing?

There are some things we can do. For one thing, we need to stop taking on more than we can deliver. Imagine, if you will, a health system with two hospitals and four surgeons. They are required to cover two widely-separated facilities 24/7, have daily clinics, and operate every day. It can't be done. They will burn out, because they're trying to do too much. And yet, these sorts of demands on physician time are common.

Many employed physicians, even some in private practice groups, have their compensation tied to productivity. Shanafelt, et al., reported a study of 7,900 general surgeons. Compensation based only on productivity was strongly associated with burnout (odds ratio 1.37:1).[3] Payment for productivity is a current management fad. It's been adopted, as usual with such fads, with no evidence for its effectiveness. Perhaps we should reconsider the idea. Labor unions used to go on strike about being paid for piecework, rather than hourly. Physicians don't tolerate being paid for piecework any better than factory workers.

There were other results from the Shanafelt study. Work hours and numbers of nights on call were significant predictors of burnout, although much less than the compensation model. A spouse who also works in health care (as, nurse or physician) was fairly strongly associated with burnout (odds ratio 1.23). There's probably not much that can be done about that – divorce is a really radical preventive measure – but we should recognize it as

a stressor. Increasing age decreased the chance of burnout, which is reassuring to some of us.

The thing that stands out from the literature is the absolute necessity of having enough time off to recover from the stresses of work. We are not, contrary to what we may think, indispensable. In fact, the feeling of indispensability is one of the symptoms of burnout. It may be an effect, but I suspect it's actually a cause. We all know doctors who would spend all of their time in the hospital, if they could. Not healthy, folks. We don't even let residents do that anymore.

Oddly, it doesn't seem to matter what we do, as long as it's not work. There is what I think of as the Medical Mission Paradox. A highly stressed-out physician or nurse goes to a poor country and works hard to deliver health care under adverse conditions for a couple of weeks. It's just like they do at home. But they usually come back with renewed vigor, to accompany their sunburn and skin rash. Why? For one thing, it's time-limited. You go, work hard, and then leave. But your regular work is different. You can't work hard and then just sail away. (Actually, you can, but working on a cruise ship doesn't occur to most of us as a career option. Perhaps it should.) And you don't have any worries about money, at least not while you're on the trip. Compensation is hardly an issue. This paradox supports the conclusion that physicians may love their work, but are overly stressed by their working environment.

It is very important to have alternatives. Older physicians are less likely to get burnout. Why is that? It's partly because some of the ones with burnout have already quit. But I think it's mostly because when you're older, the end is in sight. You can quit, if you want to. You don't feel trapped, because you're not. When you're 45 or 50, and the kids are in high school and college, you're well and truly stuck in one place. Or so it may seem. That feeling of being unable to change things, of being powerless, is a precursor to burnout. It relates to the low sense of personal accomplishment, a common theme in burnout. For many years, I've advised younger and mid-career faculty surgeons that they should interview for a new job every year or two. For one thing, it gives them a feeling of being appreciated. And then, they very often come back from the interview with a new appreciation for where they are. Of course, they sometimes choose to leave. But don't get burned out. Personally, I moved from Denver to Kansas City in my late 40s, with children in college. Good move, it was.

All of this makes a difference, not only to us, but to our patients. A tired and discouraged physician is not going to be at his or her best. Balch, et al., analyzing data from the study of 7,900 surgeons cited above, found a strong relationship between hours worked and nights on call per week, and both medical errors and burnout.[5] The threshold for nights on call was two nights per week or more, which is surprisingly low. But if surgeons are required more than once a week to work one day, take call overnight, and then work all the next day, there will be adverse consequences. The data was clear. In fact, surgeons themselves attributed many of their increased errors to burnout.

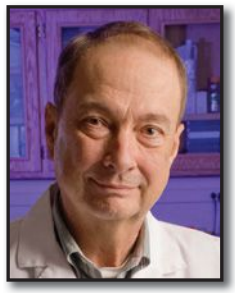
It is likely that work hours influence burnout for most other specialties. In the Medquest survey, those specialties with over 40% burnout rates are nearly all those requiring night call or night work, while the majority of those with rates under 40% do not. But the relationship should not be overstated. Emergency medicine, for example, was the top group in that survey, with over 50% burnout. But it is largely worked in time-limited periods, and groups are uniformly careful not to over-commit their physicians. If they aren't they won't have any physicians. There are many other factors in burnout, and simply totaling up work hours or nights on call will not capture those factors.

It is likely that the relationship between burnout and errors is true across all specialties. You don't make an error because you've been up all night. You make an error because you've been up all night and you don't care anymore. That's burnout. It doesn't just hurt us and our families. It hurts our patients. We should not only avoid it in ourselves, but we should help our colleagues to avoid it. Remember, that burned-out surgeon may be operating on you. The patient you save may be you.

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Missouri Physicians Do Not Stand Alone

by Robert Bondurant, RN

Physicians who utilize their state physicians health program have a greater chance of managing their substance abuse, mental health, and behavior issues more effectively over the long-term.



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Physicians with psychoactive substance use disorders, physical illness and mental health problems have long been documented throughout history. Formal efforts to deal with physician impairment existed as far back as 1958. At that time the Federation of State Medical Boards (FSMB) of the United States identified drug addiction and alcoholism among doctors as a disciplinary problem. It called for the development of a model program of probation and rehabilitation that could be adopted by individual state boards. Ten years later, another attempt was made to encourage the development of physician health programs when the FSMB approved a resolution calling for nationwide programs.

The Missouri Physicians Health Program (MPHP), a program sponsored by the MSMA and its component medical societies, was incorporated in 1985. The program is a product of a unique history of compassion that began among physicians.

The Federation of State Physician Health Programs, Inc. (FSPHP) evolved from initiatives taken by the American Medical Association (AMA) and individual state physician health programs, focusing upon rehabilitation and monitoring of physicians with psychoactive substance use disorders as well as mental and physical illness. The initial success of these efforts led to the creation of an independent organization that would carry out this mission in a consistent and objective fashion. Beginning in December 1990, the FSPHP assumed this role.

In a landmark policy paper prepared by the AMA Council on Mental Health, "The Sick Physician: Impairment by Psychiatric Disorders, Including Alcoholism and Drug Dependence," the AMA acknowledged physician impairment. In 1974, model legislation was developed that offered a therapeutic alternative to discipline, recognizing alcoholism and other drug addictions as illnesses. The AMA held a Physician Health Conference in April 1975 and a second in 1977 when it officially recognized the psychiatrically disturbed physician. A flurry of articles published in the late 1970s increased education and awareness about physician addiction. By 1980, less than a decade after the AMA's policy paper, "all but three of the 54 U.S. medical societies of all states and jurisdictions had authorized or implemented impaired physician programs." Today, most states have responded and developed programs which operate within the parameters of state regulation and legislation and provide many different levels of service to physicians in need.

The FSPHP is now an independent, duly constituted professional educational and nonprofit corporation with elected officers and a Board of Directors. Initiated by several states with advanced programs, it now has a membership of 42 state programs. In an attempt to foster continued communication and understanding between the FSPHP and the FSMB, annual meetings of the FSPHP and the FSMB are

often scheduled at the same meeting location to allow participation in both meetings.

Goals of Federation of State Physicians Health Programs

The Federation of State Physician Health Programs (FSPHP) is a nonprofit corporation whose purpose is to provide a forum for education and exchange of information among state programs, to develop common objectives and goals, to develop standards, to enhance awareness of issues related to physician health and impairment, to provide advocacy for physicians and their health issues at local, state, and national levels, and to assist state programs in their quest to protect the public.

The goals of the FSPHP are to:

- achieve national and international recognition as a supporter of state physician health programs.
- promote the best medical care possible for all patients.
- promote early identification, treatment, documentation, and monitoring of ongoing recovery of physicians prior to the illness impacting the care rendered to patients.
- pursue consistent standards, language, and definitions among state physician health programs.
- maintain an organizational structure that will help achieve its vision and mission.

Goals of the Federation of State Medical Boards

The Federation of State Medical Boards (FSMB) is a national non-profit organization representing the 70 medical and osteopathic boards of the United States and its territories. The FSMB leads by promoting excellence in medical practice, licensure, and regulation as the national resource and voice in behalf of state medical and osteopathic boards in their protection of the public.

The FSMB and the AMA have a longer history than physician health programs in being concerned about physician health. It was from this mutual concern that the PHP movement began in the 1970s. While the State PHP programs have been in the trenches for years doing the hands-on work of helping physicians, these two organizations have provided great support.

The FSMB has developed a "Policy on Physician Impairment" which is very valuable. It references the work of the FSPHP and their "Physician Health Program Guidelines." These two documents provide a creditable road map that most individual state programs do not have the resources to independently develop.

If you do not have access to these documents, please contact one of the members of our staff and we will gladly provide one. These are tools we rely on. These documents are equivalent to a "standard of care" that physicians must follow.

It is important that all Missouri physicians know of our existence but also can feel confident in our ability to provide services. They must know that we are using current and acceptable standards of care.

When that physician, medical student, colleague or family members calls, they want to be certain they are doing the "right" thing. They desire not to expose their friend, loved one or colleague to excessive harm. The standard of care developed by both organizations and practiced by member programs of the FSPHP can give them assurance that they will be receiving state of the art care.

What Is a Physicians Health Program?

A Physicians Health Program should be a program that has membership in the FSPHP and voluntarily follows their guidelines. The program structures may vary throughout the states, but the standards of care as defined by the FSPHP provide for consistency.[1] These programs are created to help addicted physicians get the drug, alcohol, and mental health treatment they need to keep their licenses and return to practice. Physicians who voluntarily accept the help of their state PHP can often avoid formal complaints to the medical board along with punitive measures. This can often be done while maintaining strict confidentiality.

PHPs are non-disciplinary in nature and have no direct authority over licensure. However, they may recommend the continuance or discontinuance of practice through a process of evaluation and long-term monitoring. PHPs do not treat physicians. The real strength of the PHP is its ability to monitor recovering physicians. While we desire to trust our participants, we strive to verify and not just hope.

PHPs are able to provide a structure and accountability as well as offer support, long-term monitoring and management, advocacy and other services as recommended by the physician's treating professionals. Our goal is to save lives and careers of addicted or mentally ill physicians as well as protect the public through assisting their physicians.

The PHPs themselves have no power to restrict or remove physicians from practice. However, the MPHP works to maintain a close working relationship and trust of the Missouri Board of Healing Arts, the BNDD, and the DEA. They have the authority to take whatever appropriate action is necessary, and often consider the perspective of the MPHP.

PHPs have created a very successful model for the management of physicians in recovery. Surveys of PHP

Key Facts About the MPHP

1. Approach addictions as chronic progressive diseases.
2. Encourage early referral, & long-term treatment by a recognized professionals program.
3. Will accept referrals for substance abuse, psychiatric disorders, physical disease, disruptive behavior and professional sexual misconduct.
4. Due to not being constrained by legal requirements as are regulatory agencies, we can act more quickly to provide interventions, referrals for treatment and monitoring.
5. Require no-tolerance abstinence and relapse taken very seriously.
6. Utilize highly qualified evaluation and treatment. There is a difference in treatment programs.
7. Provide educational programs to medical societies, hospital medical staffs, medical schools and any organizations wishing to learn how physicians are managed to ensure a healthy, safe practice for patients.

participants show the highest long-term recovery rates recorded in the treatment outcome literature. According to our experience, over 90% of participants return to work with little or no evidence of serious risk or harm to patients.

Initially, the focus was on addicted physicians and physician suicide. However, over time this has been expanded to include mental health and behavior issues. The MPHP provides services in all these areas. Further, the MPHP provides services to physicians, residents, and medical students. In addition, monitoring, education and consultation is eagerly provided to CMOs, VPMAs, MECs, program directors and regulatory agencies.

PHPs have a high success rate. Physicians who utilize their state PHP have a greater chance of managing their substance abuse, mental health, and behavior issues more effectively over the long-term. For example, the standard of care for alcohol dependence is five years of monitoring. Should relapse be detected, the monitoring period is extended for another five years. The goal is a strong five years of documented recovery without relapses.

Missouri Physicians Do Not Stand Alone

In addition to the FSMB, FSPHP, regulatory agencies, and treatment professionals, we rely on individual physicians to effectively utilize our services. If physicians are not properly educated about what the PHP does, we will not get the opportunity to do the work we know so well.

I hope this article has stirred some interest in the reader. You may know a colleague, loved one or friend who needs the type of assistance your PHP can provide. By doing nothing, you harm that person. By referring the individual to your PHP, you participate in saving their life.

The MPHP does not stand alone! You as an individual physician are one of our greatest assets. As you desire to take good care of your patients, we desire the same for Missouri physicians.

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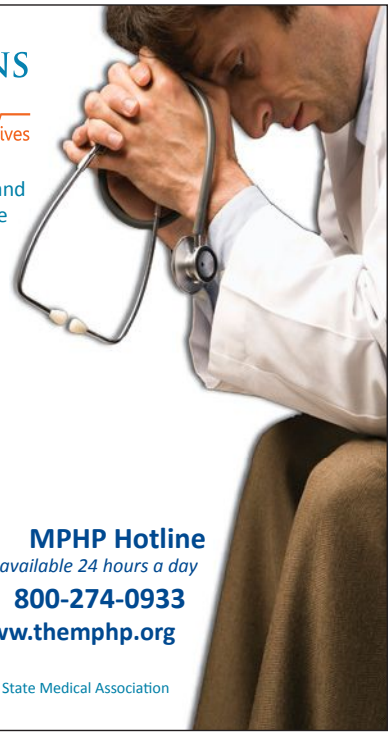
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MISSOURI PHYSICIANS HEALTH PROGRAM
The Physician Lifeline: Preserving Physicians' Lives

The MPHP is available to all Missouri physicians and physicians in training, and is designed to facilitate the physician's return to healthy personal and professional functioning through early identification, intervention, and treatment.

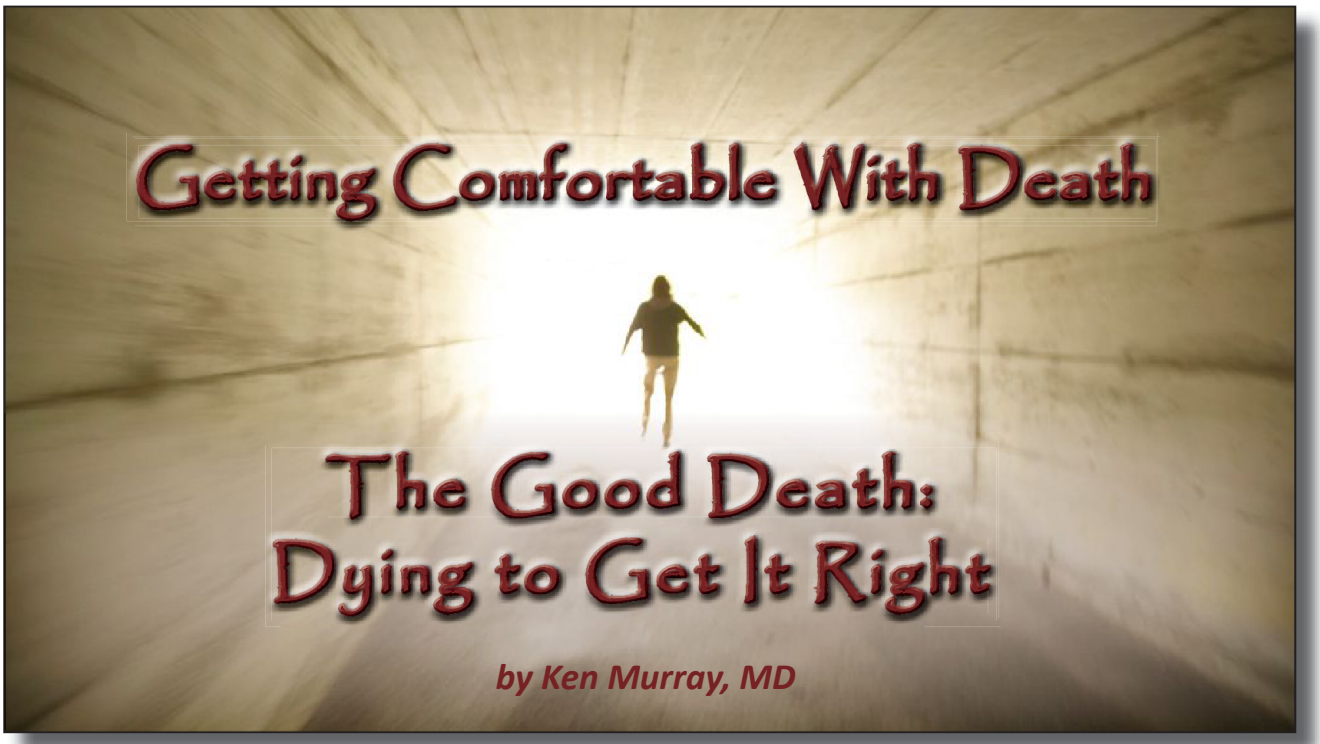
Issues We Address
- Substance Abuse
- Mental Health
- Behavioral Health Problems
- Disruptive Behavior
- Stress-Related Problems
- Boundary Violations
- Physical Illness

Program Services
- Education
- Consultation
- Intervention
- Referral for Treatment
- Monitoring
- Advocacy



MPHP Hotline
available 24 hours a day
800-274-0933
www.themphp.org

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Patients want to die no less of a good death than we physicians seek at our own demise.



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In recent years, there has been widespread discussion in the media regarding end-of-life care in America. These concerns include the disproportionate quantity of money and health care resources expended at end of life and the quality of terminal care. Quality metrics include reducing pain and suffering as much as possible as well as providing emotional and psychological support to the dying patient including kith and kin.

Care of dying people, especially the very elderly, is increasingly considered a viable place to reduce soaring health care expenditures. It has been repeatedly documented that dying patients often end up getting far more care and aggressive treatment than they actually desire. "Excessive care" might be defined as exceeding patients' advanced directives and/or the patient's wishes for life sustaining treatment when recovery is unlikely and death imminent. Additionally, the money involved is astounding. Annually about 73% of people who die in the U.S. are over the age of 65, which generally means Medicare.[1] Remarkably 25% of the entire Medicare budget is spent on people in the last few months of their life.[2] Perversely, we are providing excessive terminal care the dying don't want at an astronomical cost taxpayers and society cannot afford.

Attitudes Towards Death Are Changing

We are undergoing a cultural shift in how society thinks about death. The reaction to my article "*How Doctors Die*" was far beyond the content value or quality of

writing.[3] Characterizations of me penning a "brave expose" I find bizarre. In the thousands of internet comments my article received, many by health care professionals, are distressingly common stories of horrible experiences related to over-aggressive end-of-life care. These often haunt people for decades and create profound guilt. The "less is better" example of dying physicians struck a resonant chord with the American public.

The timing was also fortuitous. I wrote on this subject at the exact time that the professional and societal spotlights were focused on what constitutes "the good death." Peoples and cultures have gone through a number of evolutionary shifts in dealing with the end-of-life. Perhaps this can best be demonstrated by reviewing historical death rituals. As Yogi Berra famously said: "*If you don't know where you are going, you will wind up somewhere else.*"

A History of Death Rituals

For centuries it was the custom to make a plaster "death mask" when a person died. These were displayed in the home as a remembrance of the departed. These still exist for luminaries such as Plato, Abraham Lincoln, and Benjamin Franklin. Death masks had other uses such as for identification. Death masks of unknown corpses where often displayed in a storefront so that they might be identified by passersby or people seeking a missing person. In the late 1880s one famous death mask belonged to a female in Paris who became known as "The unknown woman of the Seine" where she was found floating. Her face in death assumed an enigmatic half smile like the Mona Lisa. Hundreds of thousands of replicas were made of her death mask (See Figure 1). These were often displayed in homes throughout Europe as a form of art.



Figure 1
L'Inconnue de la Seine (French for "the unknown woman of the Seine") was an unidentified young woman whose death mask was used for the head of the CPR mannequin Resusci Anne.
Source: WikiPedia

It may interest the reader to know that you may have touched your lips to a reproduction of that death mask! When Peter Safar, MD, created cardiopulmonary resuscitation (CPR), he collaborated with Swedish toy maker Asmund Laerdal (who also invented the Laerdal mask used in resuscitation). They created the medical mannequin in use today. When it came time for Laerdal to create a face for his mannequin he thought an attractive face would be best. He recalled the comely visage of the death mask that hung on the wall of his youthful home. So when you practiced CPR on Resusci Anne, you touching that facial image of "the unknown woman of the Seine."

As western civilization moved into the Victorian Era of the late 1800s, photographic images began to replace death masks. The Victorians had a strange photographic practice of posing dead people, especially children, with their family members (See Figure 2). Such pictures can be found on the internet. Frankly, they creep me out. The dead person is easy to pick out because of their peaceful repose. The living people posed with the corpse do not appear comfortable.

Civilizations from antiquity have attempted to permanently preserve the deceased's remains. These span from Egyptian mummies to modern iterations such as the plasticized

remains of Lenin to the cryopreserved head of Boston Red Sox All-Star Ted Williams.

Urbanization of Death

Following World War II there was a major demographic shift from rural-agrarian areas to urban-suburban living. Rural folk accepted death as an inevitable arc on the circle of life. They built their homes accordingly. Prior to World War 2 houses had "parlors" which, when death occurred, were used for viewing remains and religious services.

After urbanization, "parlors" no longer reposed the dead and, perhaps in an effort to ignore or marginalize death, were architecturally re-christened "living rooms". Care of the dead and their display and burial was franchised to "funeral 'homes' with their funeral 'parlors'. The death industry sprang to life.

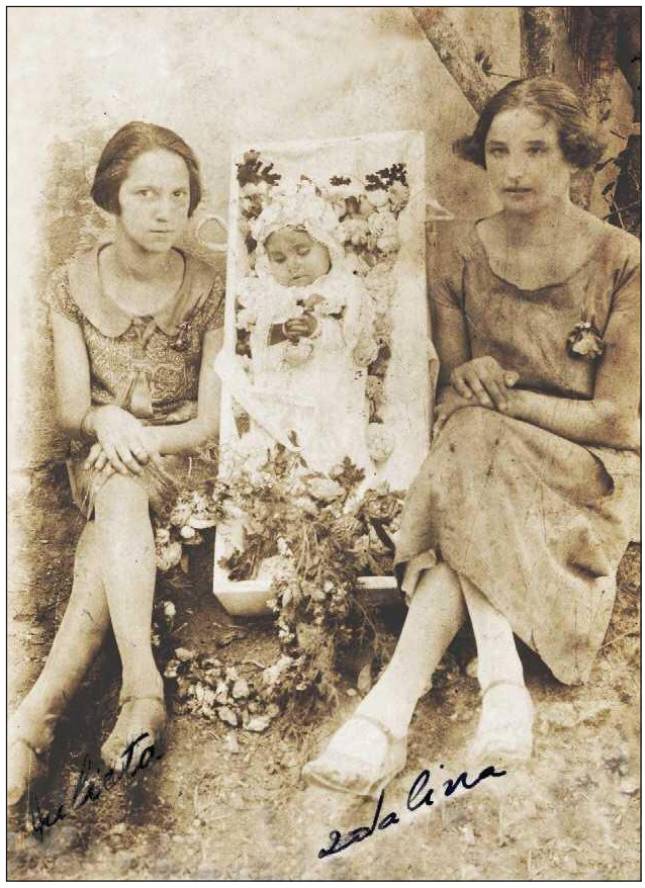


Figure 2
An example of Victorian post-mortem photography showing dead child with live family members.
Source: www.alemdaimaginacao.com.

Death in the 21st Century

So where are we now? What are our attitudes towards death? What of in end-of-life (EOL) issues? Major problems include under-utilized hospice care, many hospitals lack palliative care services, patients often don't have advanced directives and those that exist are often ignored. As I shall outline things are improving. It seems an atavistic trait that many urban/suburban people express a wish to die at home. Few of them are accorded this terminal wish.

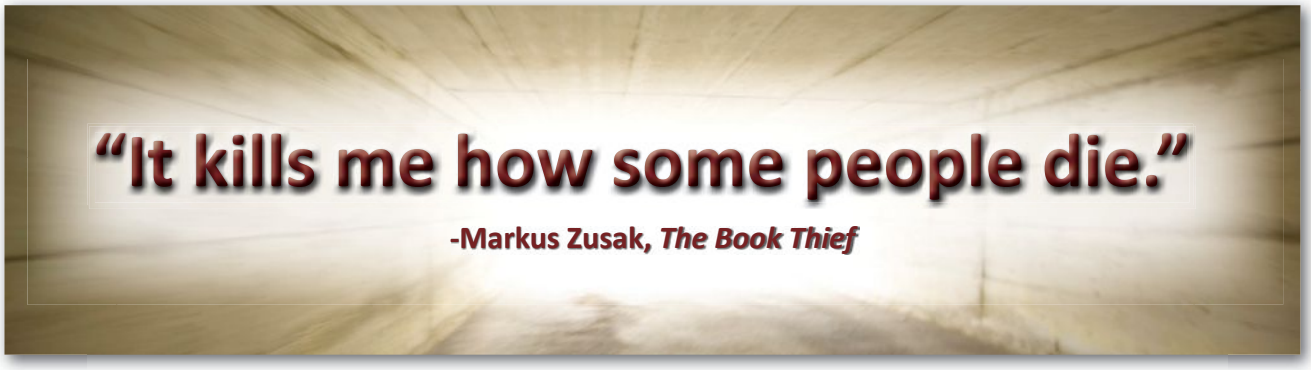
I've served on a hospital Institutional Review Board (IRB) that examines all human experimentation for proper consent, ethics, and format. All research hospitals are required to have IRBs. Recently, I asked the IRB Chair if researchers are required to obtain advanced directives from patients they enroll. He responded "No, it would be unethical." I'm intrigued by ethical issues. My interest piqued, I pursued this assertion.

Many patients entering into clinical trials have advanced stages of diseases and are far more likely to be facing EOL issues than the average patient. It seems imperative to seek direction from these terminal patients on their EOL wishes.

On the physician website www.Medscape.com, I'm the top ranked contributor on ethical issues. I posted there the IRB Chair's statement for feedback. Fifty percent of the respondents thought obtaining advanced directives ethical. Seventeen percent declared it should at least be offered. Only 33% thought it was unethical. Clearly we physicians are not working from the same playbook.

In speaking with clinicians, I get a different sense than from researchers. Could it be that research physicians are more concerned that such a requirement would turn patients away from enrollment? I believe all physicians must remember their primary obligation is to their patient - not with their research!

The primacy of physician duty to patients over the research and experimentation done on them has not been universally discussed within Medicine. That discussion needs to happen. Recalling the Tuskegee Syphilis Study[3] and the origin of HeLa cells,[4] I do



aver the medical and scientific communities have made progress. More is needed.

Another physician posting on Medscape included a picture of himself pulling aside his shirt aside to reveal a left chest tattoo saying "NO CPR". He then posed this question: "Would you do cardio-pulmonary resuscitation on a person with this tattoo needing it?" In response about half said they would ignore the tattoo and do CPR. Some of their reasons were fanciful. One, for example, said "CPR" might be the initials of an ex-wife and this was his game plan for the rest of his life. This boggles the mind and strikes me speechless.

From the vantage point of being a family physician, I have observed how different specialties deal with important underutilized health services. One example is the way pediatricians and primary care physicians deal with immunizations. Traditionally immunizations were done only on "well child visits" reserved for this purpose. Then we adopted the philosophy that "every encounter is an opportunity to immunize" and rates soared.

Maybe this approach would prove successful with advanced directives. If physicians and other health care professionals don't place importance upon them why should patients? The Federal Patient Self-Determination Act of 1991 mandates anyone admitted to a hospital, nursing home, or an HMO to be offered an advanced directive. I have been admitted to a hospital and this inquiry was buried in a pile of forms I had to sign. The admissions clerk evidently had no training in dealing with advanced directives. No one instructed me to bring my advanced directive to the hospital. (For the record I do have one.) Like many laws and regulations compelling human behavior, this one has not increased advanced directives completed on admission to these medical venues.

Many patients with end-stage diseases have never had advanced directives discussed with them. We need to do a much better job with this. I have attempted to practice what I preach. Patients seem genuinely grateful that I would bother to ask them about their EOL wishes. Patients find it empowering, a sense of which is often lost as people become progressively ill. Relieving pain and suffering encompasses giving a patient reassurance that their wishes will be honored. These discussions are not unsettling to patients. My physician colleagues do not consider me morbidly fascinated.

Progress has also occurred in patients with advanced directives stipulating no CPR or life support that come under treatment by Emergency Medical Services (EMS) systems. Almost all actions of EMS personnel are stipulated by rigid protocols. The "default" action in virtually every situation is to attempt CPR and sustain life. Advanced directives are often unknown to EMS staff. Even if a "no resuscitation' advanced directive is known, it is often ignored. Not attempting CPR is not the default protocol or part of EMR personnel DNA.

Recently in Bakersfield, California, where I use to practice, an elderly retirement home resident had a cardiac arrest. Following the institution protocol, the nurse called 911 but did not do CPR. The EMS dispatcher pleaded with her to do so. There was a huge furor in the media. The family, it turns out, was perfectly satisfied with the nurses' conduct. Although not in writing the family indicated the patient did not wish resuscitation or life support. EMS protocol on the other hand would initiate CPR and a trip to the hospital for further attempts at resuscitation.

This problem has been addressed in many states by the Physician Orders for Life Sustaining Treatment (POLST) programs (sometimes labeled MOLST). Patients' specific choices regarding resuscitation are clearly stipulated in writing and countersigned by a physician. This constitutes a legal order which supersedes EMR "attempt resuscitation on everyone" protocols. The importance of advanced directives and documentation of patients' wishes regarding resuscitation and life support cannot be over emphasized.

Figure 3
The growth of hospice care over the past 10 years is encouraging.



Hospice Care

The growth of hospice care over the past 10 years is encouraging[5] (See Figure 3). The old paradigm was to transfer terminal patients in the last few days of their lives for hospice care. Physicians are now utilizing hospice care much earlier usually when recovery is impossible and patients enter the end-of-life segment of their existence. Physicians are almost universally aware of hospice. I foresee use of hospice care as the new paradigm and believe patients and their families will expect timely referrals. I believe physicians will meet these expectations.

Sometimes, I think physicians seem to need to learn a lesson. If we don't solve problems in the medical system, it will be imposed from the outside. DRGs and Obamacare come to mind. A positive approach to lowering heath care costs is the "Choosing Wisely" program of the American Board of Internal Medicine.[7] Each specialty is asked to identify five tests or procedures whose necessity should be questioned. This has the potential to reduce costs without reducing quality. As their Executive Director says, "This is a new era. People are looking at quality and safety and real outcomes in different ways."

Final Thoughts on The Good Death

The 'good death' must include the maximum possible relief of physical pain and mental anguish. The emergence of palliative care as a distinct physician lead service has improved the quality and accessibility of end-of-life care. It is crucial that physicians, other health care professionals and patients and their families understand the distinction between palliative care and hospice care. Physicians must know when to appropriately utilize these services and how to begin a compassionate and understandable conversation with patients and family.

Patients want to die no less of a good death than we physicians seek at our own demise.

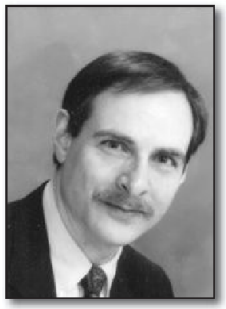
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An analysis of the incidence of NDEs among critically ill patients as documented in nine prospective studies in four countries yielded an average estimate of 17%.



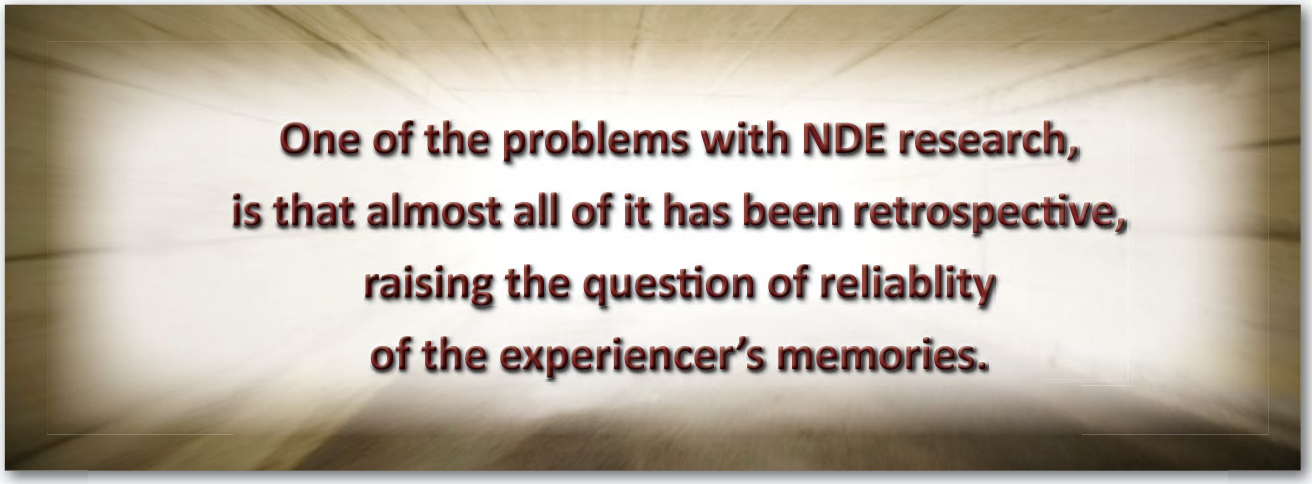
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Near-death experiences (NDEs), profound experiences reported by some people who survive close brushes with death, are important to clinicians because they often lead to pervasive changes in attitudes and behavior; because they may be confused with psychopathological states; and because they may enhance our understanding of consciousness. Proposed psychological and physiological explanations lack empirical support and fail to explain NDEs, which pose a challenge to current models of the mind-brain relationship.

Introduction

When some people come close to death, they go through a profound experience that may include a sense of leaving the body and entering some other realm or dimension, transcending the ordinary confines of time and space. Although these events had been identified as a discrete syndrome as early as 1892,[1] it was not until 1975 that Moody introduced the term *near-death experiences* (NDEs) for these phenomena. Moody described characteristic features commonly reported by survivors, including ineffability, overwhelming feelings of peace, seeing a tunnel, a sensation of being out of the body, meeting nonphysical beings including a "Being of Light," reviewing one's life, a border or point of no return, and coming back to life with marked changes in attitudes and with knowledge not acquired through normal perception.[2] A recent review of the accumulated findings from thirty years of research since Moody's seminal work has essentially confirmed his original description.[3]

An analysis of the incidence



of NDEs among critically ill patients as documented in nine prospective studies in four countries yielded an average estimate of 17%.[3] With advancements in medical resuscitation techniques, the frequency of NDEs has increased, and thus about 9 million people in the United States alone have reported this kind of experience.[4] In the last 30 years, the near-death phenomenon has been investigated extensively.[5] Near-death experiences are important to physicians for three reasons. First, NDE precipitate pervasive and durable changes in beliefs, attitudes, and values.[6] Second, they may be confused with psychopathological states, yet have profoundly different sequelae requiring different therapeutic approaches.[7] Third, clarification of their mechanisms may enhance our understanding of consciousness and its relation to brain function.[8]

One of the problems with research into NDEs is that, with a few notable exceptions, almost all NDE research has been retrospective, raising the question of the reliability of the experiencer's memories. Autobiographical memories are subject to distortion over years, and memories of unusual or traumatic events may be particularly unreliable as a result of emotional influences. However, memories of NDEs are experienced as "more real" than memories of other events,[9] and memories of NDEs have been shown to be unchanged over a period of 20 years.[10]

Explanatory Models

Studies of near-death experiencers have shown them collectively to be psychologically healthy individuals who do not differ from comparison groups in age, gender, race, religion, religiosity, mental health, intelligence, neuroticism, extroversion, trait and state anxiety, or relevant Rorschach measures.[11]

Expectancy

A plausible hypothesis postulates that near-death experiences are products of the imagination, constructed from one's personal and cultural expectations, to protect oneself from facing the threat of death. Comparisons of NDE accounts from different cultures suggest that prior beliefs have some influence on the kind of experience a person will report following a close brush with death.

However, individuals often report experiences that conflict with their specific religious and personal expectations of death; people who had no prior knowledge about NDEs describe the same kinds of experiences as do people who are quite familiar with the phenomenon, and the knowledge individuals had about NDEs previously does not seem to influence the details of their own experiences; experiences that were reported before 1975, when Moody's first book coined the term NDE and made it a well-known phenomenon, do not differ from those that were reported since that date;[12] and young children, who are less likely to have developed expectations about death, report NDEs with features similar to those of adults.

Cross-cultural differences in NDE accounts suggest that it is not the core experience that differs but the ways in which people interpret what they have experienced in terms of the images, concepts, and symbols available to them.[13]

Birth Memories

Some authors have suggested that NDEs, with their dark tunnel, bright light, and going to another realm, could represent memories of one's birth. However, newborns lack the visual acuity, spatial stability of their visual images, mental alertness, and cortical coding capacity to register memories of the birth experience, and reports of out-of-body experiences (OBEs) and passing through a tunnel to another realm are equally common among persons born by Caesarean section and those born by normal vaginal delivery.[14]

Altered Blood Gases

A common assumption has been that anoxia or hypoxia, as a common final pathway to brain death, must be implicated in NDEs. However, NDEs occur without anoxia or hypoxia, as in non-life-threatening illnesses and near-accidents, and hypoxia or anoxia generally produces idiosyncratic, frightening hallucinations, and leads to agitation and belligerence, quite unlike the peaceful NDE with consistent, universal features. Furthermore, studies of people near death have shown that those who have NDEs have oxygen levels the same as, or higher than, those who do not have NDEs.[15] Likewise, some authors have suggested that hypercarbia may contribute to NDEs; but several studies have reported carbon dioxide levels to be normal or below normal during NDEs.[15]

REM Intrusion

NDEs have been associated with intrusion into waking consciousness of cognition typical of rapid eye movement (REM) sleep. However, the REM intrusion hypothesis is contradicted by the common occurrence of NDEs under conditions that inhibit REM, such as general anesthesia,[14] and by the finding of reduced REM in near-death experiencers.[16]

Toxic or Metabolic Hallucinations

NDEs have been dismissed as elaborate hallucinations produced either by medications given to dying patients or by metabolic disturbances or brain malfunctions as a person approaches death. However, many NDEs are recounted by individuals who had no metabolic or organic malfunctions that might have caused hallucinations, and patients who receive medications in fact report fewer NDEs than do patients who receive no medication.[14]

Furthermore, organic brain malfunctions generally produce clouded thinking, irritability, fear, belligerence, and idiosyncratic visions, quite unlike the exceptionally clear thinking, peacefulness, calmness, and predictable content that typify the NDE. Visions in patients with delirium are generally of living persons, whereas those of patients with a clear sensorium as they approached death are almost invariably of deceased persons. Patients who were febrile or anoxic when near death report fewer NDEs and less elaborate experiences than do patients who remain drug-free and are neither febrile nor anoxic. That is, drug- or metabolically-induced delirium, rather than causing NDEs, in fact inhibits them from occurring or being recalled.[14]

Neurochemistry

NDEs have been speculatively attributed to a number of neurotransmitters in the brain, most frequently endorphins or other endogenous opioids, a putative ketamine-like endogenous neuroprotective agent acting on N-methyl-D-aspartate (NMDA) receptors, serotonin, adrenaline, vasopressin, and glutamate. These speculations are based on hypothetical endogenous chemicals or effects that have not been shown to exist, and are not supported by any empirical data.[17]

Neuroanatomy

NDEs have also been speculatively linked to a number of anatomic locations in the brain, including the frontal lobe attention area, the parietal lobe orientation area, the thalamus, the hypothalamus, the amygdala, the hippocampus, Reissner's fiber in the central canal of the spinal cord, and most often the right temporal lobe, based on purported similarity of NDEs to temporal lobe seizure phenomena. However, NDE-like phenomena are almost never seen in temporal lobe seizures, and electrical stimulation of the temporal lobes typically elicits fragmented bits of music, isolated and repetitive scenes that seemed familiar, hearing voices, experiencing fear or other negative emotions, or seeing bizarre, dream-like imagery, in addition to a wide range of somatic sensations that are never reported in NDEs.[17]

These putative neurological mechanisms, for which there is little if any empirical evidence, may suggest brain pathways through which NDEs are expressed or interpreted, but do not necessarily imply causal mechanisms.[17]

The International Association for Near-Death Studies

The International Association for Near-Death Studies (IANDS) was founded in 1978 "to build global understanding of near-death and near-death-like experiences through research, education, and support."

The organization was founded by physicians Michael Sabom, MD, Raymond Moody, MD, and Bruce Greyson, MD; psychologist Kenneth Ring; and medical sociologist John Audette. IANDS' mission and main focus have remained constant over the years, as it has supported near-death experiencers, promoted education, and encouraged research.

IANDS has published a scholarly peer-reviewed journal, *The Journal of Near-Death Studies*, since 1981, as well as a quarterly newsletter, Vital Signs. IANDS also publishes Near-Death Experiences: Index to the Periodical Literature, 1877 through 2011, a periodically updated digital annotated bibliography, providing researchers and clinicians with an unprecedented resource on all periodical publications that have addressed NDEs.

The IANDS website, www.iands.org, includes information for researchers, experiencers, and clinicians, including downloadable brochures on topics such as aftereffects of NDEs, helping near-death experiencers, children's NDEs, distressing NDEs, NDEs in combat veterans, the impact of NDEs on bereavement, and psychotherapy for experiencers. IANDS has also hosted an annual conference for the past 30 years; the 2014 conference will be held in California in early September; see the IANDS website for the exact location and dates.

IANDS orchestrated and has made available in the U.S. the BBC production, "The Day I Died," and sponsors a grant program through which the video has been included in the curricula of 12 U.S. medical schools. The organization also provides an online course on NDEs that offers continuing education credits through the University of North Texas for nurses, psychologists, social workers, chaplains, marital and family therapists, and professional counselors.

IANDS coordinates local educational and support groups, called Friends of IANDS, with chapters that meet periodically in 41 cities across the U.S. and 15 more in other countries. For information about the St. Louis Metropolitan Area chapter, which meets the first Sunday of every other month from 2:00 to 4:00 p.m. at The Living Insights Center, 6361 Clayton Road, Clayton, MO 63117, contact Linda Jacquin at jacadv@centurytel.net.

Effects of Near-Death Experiences

Positive Effects

Regardless of their cause, NDEs can permanently and dramatically alter the individual experiencer's attitudes, beliefs, and values. The literature on the aftereffects of NDEs has focused on the beneficial personal transformations that often follow. A recent review of research into the characteristic changes following NDEs found the most commonly reported to be loss of fear of death; strengthened belief in life after death; feeling specially favored by God; a new sense of purpose or mission; heightened self-esteem; increased compassion and love for others; lessened concern for material gain, recognition, or status; greater desire to serve others; increased ability to express feelings; greater appreciation of, and zest for, life; increased focus on the present; deeper religious faith or heightened spirituality; search for knowledge; and greater appreciation for nature.[6] These aftereffects have been corroborated by interviews with near-death experiencers' significant others and by long-term longitudinal studies.[17]

Negative Effects

Although NDErs sometimes feel distress if the NDE conflicts with their previously held beliefs and attitudes, the emphasis in the popular media on the positive benefits of NDEs inhibits those who are having problems from seeking help. Sometimes people who have had NDEs may doubt their sanity, yet they are often afraid of rejection or ridicule if they discuss this fear with friends or professionals. Sometimes NDErs do receive negative reactions from professionals when they describe their

experiences, which discourages them even further from seeking help in understanding the experience.[18]

Family and friends may find it difficult to understand the NDEr's new beliefs and behavior, as many of their new attitudes and beliefs are so different from those around them. Difficulty reconciling the new attitudes and beliefs with the expectations of family and friends can interfere with maintaining old roles and lifestyle, which no longer have the same meaning. NDErs may find it impossible to communicate to others the meaning and impact of the NDE on their lives.[18]

Researchers have noted that the value incongruities between NDErs and their families lead to a relatively high divorce rate among NDErs. The effects of an NDE "may include long-term depression, broken relationships, disrupted career, feelings of severe alienation, an inability to function in the world, long years of struggling with the keen sense of altered reality."[19]

Near-Death Experiences & Mental Health

Although retrospective studies of near-death experiencers have shown most of them to be psychologically healthy individuals, NDEs may be confused with several psychopathological conditions.

Depersonalization

NDE have been described as a type of depersonalization, or feeling of strangeness or unreality, that mimics a state of death and serves as a sacrifice of a part of the self to avoid actual death. However, depersonalization would not account for the hyperalertness, enhanced affect, and

The Division of Perceptual Studies

The Division of Perceptual Studies at the University of Virginia Health System is a research unit within the Department of Psychiatry and Neurobehavioral Sciences at the University of Virginia Health System.

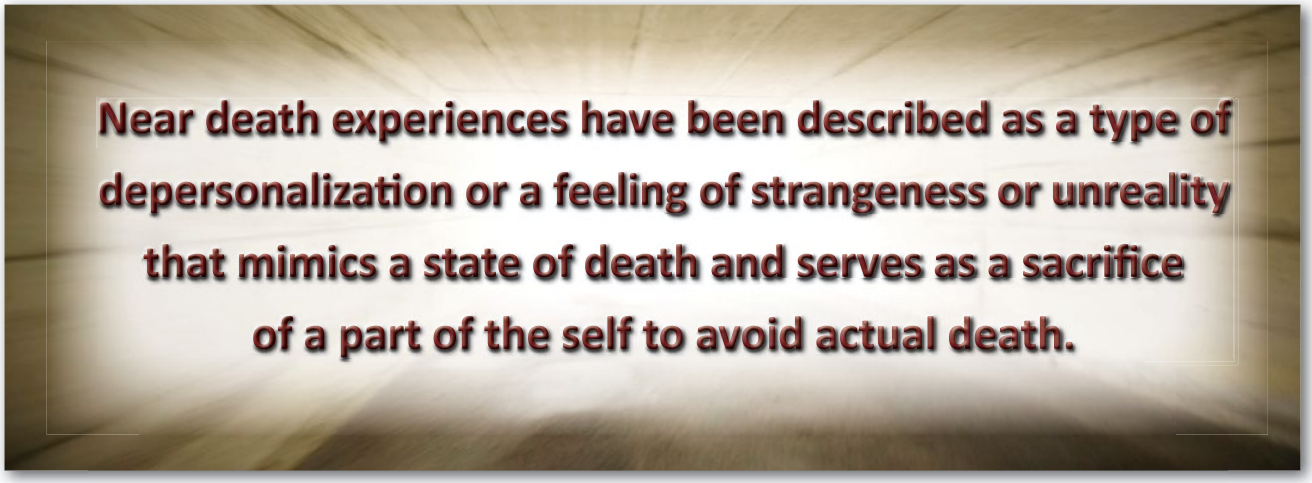
It was founded 45 years ago under the leadership of the late Ian Stevenson, after an initial endowment from the late Chester F. Carlson, inventor of xerography. The Division's main purpose, and the raison d'être for its foundation, is the scientific, empirical investigation of phenomena that challenge currently accepted models of the nature of mind and consciousness and their interactions with the physical world. Despite widespread accounts and popular interest in these phenomena, there is a paucity of careful scientific research into their occurrence and processes.

The Division's researchers are dedicated to the use of scientific methodologies in their investigation of a range of such phenomena that so far have defied adequate explanation. Examples of such phenomena include near-death experiences, out-of-body experiences, claimed memories of previous lives, apparitions, deathbed visions, accounts of apparent spontaneous paranormal phenomena, and laboratory experiments on apparent paranormal phenomena.

The Division is the oldest university-based research unit in the world established specifically for the empirical study of the relationships of mind to brain. Although it is part of the University of Virginia, its research is not funded by state money but is supported entirely by grants from outside foundations and institutions and from donations from private individuals.

The Division maintains the Ian Stevenson Memorial Library, a specialized library of scholarly books and journals, which is a resource affiliate of the Library of Congress and the National Library of Medicine; and the Ray Westphal Neuroimaging Laboratory, a state-of-the-art EEG facility with an electromagnetically and acoustically shielded experimental chamber. Although the Division has focused its resources on research rather than education, it does provide summer research fellowships for medical students and research electives for both medical students and psychiatric residents, and has hosted a post-doctoral fellowship.

The director of the Division is Bruce Greyson, MD. Current faculty researchers include Carlos Alvarado, PhD, Ross Dunseath, PhD, Edward Kelly, PhD, Emily Kelly, PhD, and Jim Tucker, MD.



mystical consciousness typically seen in NDEs; and depersonalization differs from NDEs in its age and gender distribution, unpleasant and dreamlike quality, and separation of the observing self from the functioning self.[7]

Dissociation

NDEs have been compared with dissociation, the separation of thoughts, feelings, or experiences from the normal stream of consciousness and memory that is an adaptive response to trauma common in otherwise normal people. Many NDEs share with dissociation the disconnection of perception, cognition, emotion, and identity from the mainstream of the individual's conscious awareness. NDErs may have a tendency to dissociate in response to catastrophic events, though not in response to everyday stressors. Symptoms of dissociation among near-death experiencers, though higher than among non-experiencers, are still within the range of the normal population and far below that seen in clinical dissociative disorders. The dissociative symptom profile of NDErs is suggestive of a normal psychophysiological response to stress, rather than a pathological type of dissociation or a manifestation of dissociative disorder.[7]

Posttraumatic Stress Disorder

NDEs may lead to symptoms of posttraumatic stress disorder (PTSD) like recurrent, intrusive recollections of the event, recurrent distressing dreams of the event, diminished interest in previously important activities, estrangement from others, and a sense of foreshortened future. The incidence of PTSD symptoms among NDErs is higher than that among survivors of close brushes with death without NDEs, although it is within the normal range and far below that seen in clinical PTSD. The NDErs' profile of moderate elevation of intrusive thoughts, images, feelings, and dreams, but no elevation of avoidant psychic numbing, behavioral inhibition, or counterphobic activities, is typical of a nonspecific response to catastrophic stress rather than of PTSD.[7]

Other Pathological Conditions

NDEs differ from autoscopy, seen in a variety of brain lesions, in that the observing self or point of perception in NDEs is experienced as outside the body, from which perspective the subject sees his or her own inactive physical body, rather than seeing an apparitional "double" (or more typically a portion of one) from the perspective of the physical body, as in autoscopy. NDEs are more complex than the mental imagery induced by drugs, and more often endowed with personal meaning, and often occur in the absence of psychoactive substances. NDEs can be differentiated from brief psychotic disorders by their acute onset following a stressful precipitant, and by the experiencers' good premorbid functioning and positive exploratory attitude toward the experience.[7]

NDEs in Psychiatric Patients

In a large sample of patients in a psychiatric outpatient clinic, among those patients who had come close to death, scores on every measure of psychological distress were lower for those who reported NDEs than for those who did not. The percent of patients in this study reporting near-death experiences was comparable

to that found in the general population, suggesting that mental illness itself is not associated with near-death experiences, but in fact NDEs may mitigate the distress of mental illness.[20]

Near-Death Experiences & Consciousness

Some of the phenomenological features of NDEs are difficult to explain in terms of our current understanding of psychological or physiological processes. For example, experiencers sometimes report having viewed their bodies from a different point in space and are able to describe accurately what was going on around them while they were ostensibly unconscious;[21] or that they perceived corroborated events occurring at a distance outside the range of their sense organs, including blind individuals who describe accurate visual perceptions during their NDEs.[22]

Furthermore, some NDErs report having encountered deceased relatives and friends, and some child NDErs describe meeting persons whom they did not know at the time of the NDE but later identified as deceased relatives from family portraits they had never seen before. Other experiencers report having encountered recently deceased person of whose death they had no knowledge, making expectation a highly implausible explanation.[23] These aspects of NDEs present us with data that are difficult to explain by current physiological or psychological models or by cultural or religious expectations.[22]

These features and the occurrence of heightened mental functioning when the brain is severely impaired, such as under general anesthesia and in cardiac arrest, challenge the common assumption in neuroscience that consciousness is solely the product of brain processes, or that mind is merely the subjective concomitant of neurological events.[24]

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Disclosure

None reported.

MM

Do Business Considerations & Bottom Line Finances Trump Quality Medical Care and Service in Hospitals' Administration?

by John Sheldon, MD

It is prudent to align with an organization that is trustworthy and does not have a record of frequent abandonment of physician groups providing quality service in the pursuit of increased profits.



John Sheldon, MD, MSMA member since 1998, is a radiation oncologist in the Kansas City Area.
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We practice medicine in a time of sweeping currents of change. Hospital systems have rapidly been acquiring medical groups in pursuit of vertical hospital-physician integration. These organizations also have been acquiring smaller hospitals or hospital systems, or merging with large systems, in pursuit of market power which accompanies larger scale. If ownership cannot be achieved, then partnerships or alliances are pursued. Swept up in these currents are many of us hard-working and well-intentioned physicians whose primary concern is for caring for our patients. In some instances, our practice settings suddenly and clandestinely may be dismantled from underneath us. This happened recently to my esteemed colleague, Patrick Townsend, MD, who until July 1 of 2013 practiced radiation oncology at North Kansas City Hospital (NKCH).

North Kansas City Hospital decided to partner with the University of Kansas Cancer Center resulting in a rearrangement of cancer services at NKCH and changes in physician staffing. Dr. Townsend was told that his services would no longer be needed, as were the other radiation oncology colleagues of his group. As Dr. Townsend is a superb clinician, it would not be possible for NKCH CEO Peggy Schmitt to raise concerns about quality of care as a rationalization for this move. Nor is it accurate to use "patient access to clinical trials" as a primary rationalization, since cancer patients at NKCH already have access to a broad array of NCI (National Cancer Institute)-funded clinical trials through the Kansas City Clinical Oncology Program (www.kccop.org).

Rather, the true rationalization is that "it's just business!" And that is the stark and disturbing truth. Hospitals are free to enter into an exclusive contract with a physician or physician group in a particular specialty. This can totally disrupt and destroy the practice of other specialists locked out of the monopolistic actions taken by the hospital. I would note that patients then have but one choice for "exclusive contract" medical and surgical services.

So what options do physicians have, or what lessons should we learn, from these and other physician-disempowering realities? Forgive me if what follows seems trite, but it never hurts to have reminders:

How Healthy is North Kansas City Hospital's Bottom Line? Better Than Your's Doctor?

FINANCIAL STATISTICS 2012

	Dollar Amount	Percent
Gross Patient Revenue	$1,058,951,561	97.7%
Non-Patient Revenue	$25,479,244	2.3%
Total Revenue	$1,084,430,805	
Net Income (or Loss)	$37,998,261	3.5%

Source: www.ahd.com



1. Retire.

And many doctors are doing so in increasing numbers. This exacerbates an already dire shortage of physicians.

2. Adapt.

Evolution favors those who are able to adapt. Of key importance here is that, if a physician does align with a particular hospital organization, it is prudent to align with an organization that is trustworthy and does not have a record of frequent abandonment of physician groups providing quality service in the pursuit of increased profits.

3. Move.

Perhaps the grass is greener somewhere else?

4. Get bigger.

To gain power and leverage, one needs size. Merge with other medical groups. Merge to become a multi-disciplinary group. Join an Independent Practice Associate (IPA).

5. Get business-savvy (if you aren't already).

The stronger your group is financially, the more likely it will be able to withstand the whims and caprice of a hospitals' bottom-line driven business plans.

6. Get legally-savvy.

Hire a good lawyer. Pursue strong contracts. Don't agree to non-compete clauses. Protect your rights.

7. Reinvent yourself (or your group).

Expand your services. Broaden your skills. Get additional training or certification. Get an MBA. Restructure as a concierge-style practice. Is there a way to make your practice innovative?

8. Get organized with other physicians.

Join the Metropolitan Medical Society of Greater Kansas City. Join Missouri State Medical Association or Kansas Medical Association. These are outstanding physician advocacy groups that will have more stature and clout with widespread physician membership. Join your professional societies. Advocacy matters, whether you like it or not. Advocate in Jefferson City or Topeka for important physician legislative issues. Silence and complaining are not effective strategies.

9. Get political.

Talk to (or write or email) your legislators. Make targeted political donations. Getting legislation passed is never easy, but getting engaged politically is the only way to have influence. (See page 440 on how to get involved and page 444 for MSMA's preview of the 2014 Legislative Session.)

10. Change careers....if you are still young enough.

Sadly, the careers thriving these days are hospital administrators, trial lawyers, and state and federal employees.

11. And finally, don't forget about your own health!

Eat wisely, exercise regularly, find an effective and healthful way to manage stress, find a hobby, read a book, appreciate culture, socialize with friends, and enjoy and cherish your family. Success in practice means nothing without a personal sense of happiness.

[Editor's Note: North Kansas City Hospital chose not to offer a response for publication. Also see *New York Times*, December 2, 2013, "As Hospital Prices Soar, a Single Stitch Tops $500." Hospitals are identified as the primary driver of escalating medical care costs which egregiously are not based on hospital costs/overhead.]

Just Don't Sit There - Do Something!

by Nathan Granger, MD

The Kansas City Metropolitan Physician Association, an independent physician association (IPA) www.kcmetrophysicians.com, operates under the simple strategic thought: we have got to work together for a better tomorrow for our community, patients and physicians. To do otherwise will result in more and more (same old) stories as here related by John Sheldon, MD, about high quality, well-respected physicians getting "thrown under the bus" for no convincing patient care or community health concern by hospital systems.

This story may soon be the rule rather than the exception. Unlike many physicians, hospitals will tend to almost always do strategically what they think best for their "bottom line". Woe to the excellent physician that stands in the way of a hospital's perceived financial success. Despite verbiage to the contrary: quality, cost and patient choice of healthcare providers are not the primary concerns of hospitals.

Ask yourself: How can hospitals justify adversely impacting the physician-patient relationships of hundreds of cancer victims for no convincing reason? If you don't like the answer, you can do something. Your medical societies, hospital medical staffs and IPA's, with your support and leadership can put an end to these and other unfair hospital system practices directed against patients, physicians and our communities.

Our Suggestions for Action:

- Encourage legislation ending Economic Credentialing by hospitals
- Promote Most Favored Nation Clause legislation
- Support Any Willing Provider Legislation
- Foster an environment where independent practice continues to be a viable practice model
- Support Certificate of Need repeal
- Promote Medical Staff Autonomy-review and amend your bylaws
- Meaningful Medical Staff Involvement in all physician credentialing decisions
- Support the unenforceability of non-compete clauses in hospital-physician contracts

Sure, Dr. Sheldon's specific story concerns a radiation oncologist. It might not be you or your medical specialty this time. However, there remains nothing to stop or to hinder your hospital from making a behind-closed-door decision to replace you with a "higher quality" (or more profitable) physician.

If you want to work together with us to solve this and other problems facing our health care system, we would love to have you meet or join us: kcmetrophysicians.com or 816-977-2950.



Nathan Granger, MD, MBA, MSMA member since 1997, is the KCMPA-ACO Chief Medical Officer.
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Missouri State Medical Association Alliance

Holiday Sharing Card

From the following who most graciously made donations to the Missouri State Medical Association Foundation & Alliance Scholarship Funds.

We wish you and your families the best for 2014.

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A Milestone in Medical History

German Medical Association Finally Apologizes For Atrocities Committed by German Physicians Under the Nazis

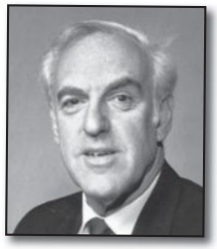
by Arthur Gale, MD

Almost seven decades after the end of World War II, the German Medical Association has made a long overdue apology for its participation in human rights violations and atrocities under the Nazi regime. In a stunning admission the Declaration states that German doctors from all strata of the profession enthusiastically supported Nazi ideology and were not coerced to support Hitler.

The Declaration of May 12, 2012, which was unanimously adopted by the delegates of the Physician's Congress declared: "In contrast to still widely accepted view, the initiative for the most serious human rights violations did not originate from the political authorities at the time, but rather from the physicians themselves… German doctors "were guilty of scores of human rights violations"… "The crimes were simply not the acts of individual doctors, but rather took place with the substantial involvement of leading representatives of the medical association and medical specialist bodies as well as considerable representatives of university medicine and renowned biomedical research facilities."

2012 also marked the 65th anniversary of the Nuremburg Doctors' Trial. Most people are aware of the famous trial in Nuremberg, Germany at the end of World War II, where leading Nazis were tried as war criminals.

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There were a number of subsequent lesser known trials at Nuremberg. One of these lesser known trials was the Doctors' trial. Twenty physicians were put on trial; sixteen were convicted, four of whom were executed by hanging.

The crimes committed by German physicians in their human experimentation have been amply documented. The victims were mainly Jews, Poles, Russians, and other prisoners. They suffered horribly from the gruesome experiments; many died.

A few examples of these experiments include subjecting prisoners to a low pressure chamber to determine the maximum altitude from which crews of damaged aircraft could parachute to safety, freezing experiments using prisoners to find an effective treatment for hypothermia, Other experiments subjected prisoners to phosgene and mustard gas, infecting inmates with malaria, typhus, tuberculosis, typhoid fever, infectious hepatitis and other diseases. The infamous Dr. Joseph Mengele performed twin experiments at Auschwitz to test his racial theories.

And finally German doctors led the euthanasia program where over 200,000 German citizens whose "lives were deemed not worthy of living, those mentally ill and also disabled persons, were put to death, and over 360,000 classified with "heredity illness" were forcibly sterilized.

The prime legacy of the Nuremberg Doctor's Trial is the Nuremberg Code, which established rules for human experimentation. Of the ten points in the Nuremberg Code Point, the first one which states "the voluntary consent of the human subject is absolutely essential" is the most important.

It should be pointed out that at the time of the Nuremberg Doctors' Trial the Allies including the United States also performed experiments on human subjects without their consent. The defense used this argument

during the trial. However, the American experiments were not considered brutal and this legal strategy failed to convince the judges. Today, the Nuremberg Code forms the basis of all human research guidelines throughout the world. It is historically fitting that the apology from the German Medical Association for crimes committed by physicians under the Nazis took place at a meeting held in Nuremberg.

There is another legacy of the Nuremberg Doctors Trial which was not positive. It let the leading members of the German Medical profession off the hook for their participation in Nazi atrocities and human rights violations. Andrew Ivy, MD, one of the two American medical consultants at the Doctors' Trial thought there were no more than two hundred criminals although "several hundred more knew what was going on." This conclusion made it appear that there were a small number of aberrant German physicians who committed atrocities. It allowed the rest of the German medical profession to evade their involvement in Nazi crimes.



Born in 1911, Josef Mengele was a German SS officer and a physician in the Nazi concentration camp Auschwitz. He qualified for scientific doctorates in Anthropology from Munich University and in Medicine from Frankfurt University. He became one of the more notorious characters to emerge from the Third Reich in World War II as an SS medical officer who supervised the selection of victims of the Holocaust, determining who was to be killed and who was to temporarily become a forced laborer, and for performing bizarre and murderous human experiments on prisoners. Surviving the war, after a period of living incognito in Germany he fled to South America, where he evaded capture for the rest of his life, despite being hunted as a Nazi war criminal. He drowned in 1979.

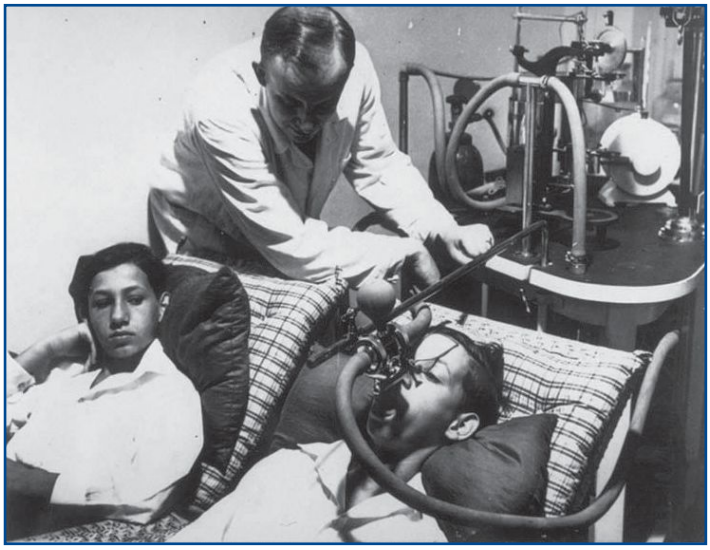
As one scholar wrote: "Absent from the dock were the leaders of the medical profession of the Third Reich, in particular the academic and scientific elite. It was this elite who legitimized the devaluation of human life and set the stage for medical crimes—crimes in which leading academics and scientists were either principals or accomplices." The annals of the downfall of German medicine are replete with the names of internationally renowned scientists who conducted experiments on human specimens from uninformed subjects not at death camps but at respected universities. The German academic and medical community over the years attempted to suppress the overwhelming evidence of German physicians' participation in Nazi atrocities and even to intimidate the investigators.

In 1933 when the Hitler regime assumed power a unanimous declaration from the Prussian Chamber of Physicians declared "its readiness to place all its energies and experience at the service of the Government of National Resurrection (the Nazis), which it salutes with joy and gratitude… none of us is likely to shed a single tear for the democratic government (the Weimar Republic) that has now passed into history." Dr. Alfons Stauber, president of the German Medical Association, wrote to Hitler that the Association "welcomes with the greatest joy the determination of the Reich government …with the promise faithfully to fulfill our duty as servants of the people's health." Nazi doctrine called for physicians to shift from the doctor of the individual to the doctor of the nation.

Almost 50% of the medical profession became members of the Nazi party –the highest of any profession. German doctors had no ethical compunctions about taking over the practices of their Jewish colleagues who suddenly lost their licenses because of Nazi racial policies. It is estimated that 17% of all medical doctors in Germany were Jewish and from 40 to 50% of the physicians in Berlin were Jewish. Taking over the practices of Jewish doctors was a huge financial windfall for German doctors.

After World War II German physicians with direct ties to the Nazis were elected to leadership positions in the World Medical Association. One such physician, Dr. Ernst Fromm was a member of the SA and SS terror organizations was elected president of the WMA in 1973-74. Another physician, Dr. Hans Joachim Sewering, president elect of the WMA, was a member of the Nazi party. Review of hospital records showed that he was linked to the euthanasia of a 14-year-old girl. Pressure from within and without Germany forced him to resign.

Until now the German medical profession never officially expressed remorse for its actions during the Hitler era. The final words of the Declaration of the German Medical Association are memorable:



Mengele used Auschwitz as an opportunity to continue his research on heredity, using inmates for human experimentation. He was particularly interested in identical twins; Mengele's experiments also included attempts to change eye color by injecting chemicals into children's eyes, various amputations of limbs, and other surgeries such as kidney removal, without anaesthesia.



The words "Arbeit Macht Frei" were above the main entrance gate at Auschwitz I gate meaning, "Work will set you free." The Auschwitz concentration camp was a network of concentration and extermination camps built and operated by the Third Reich in Polish areas annexed by Nazi Germany during World War II. It consisted of Auschwitz I (the base camp); Auschwitz II–Birkenau (the extermination camp); Auschwitz III–Monowitz (a labor camp to staff a factory), and 45 satellite camps.

"We acknowledge the responsibility for the medical crimes committed under the Nazi regime and regard these events as a warning for the present and the future…" "We pay our respects to all the victims, those still alive today and those who have already died, as well as their descendants and ask for their forgiveness."

It is important to recognize that the apology from the German Medical Association comes not from the actual perpetrators of the crimes and atrocities but from their descendants who did not have a role in establishing or implementing Nazi policies. In my estimation this makes their apology both appropriate and acceptable. The current members of the German Medical Association have joined with physicians in other Western democracies in supporting human rights and have publicly condemned the actions of their predecessors during the Nazi period.

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Photos from German Medical Association and Wikipedia.

MM

Physicians Need to Ponder & Plan Their Own End of Life Care Decisions

Congratulation to *Missouri Medicine* for publishing a long series of informative and interesting feature theme issues. I was especially excited and comforted to read the articles in the September/October 2013 issue titled "Getting Comfortable With Death & Near-Death Experiences." Kudos to Ken Murray, MD, who authored, "How Doctors Die: A Model for Everyone?" It was as if Dr. Murray was sending a desperately needed and deeply appreciated message directly to me.

I am 67-year-old recently retired physician. After 41 years of pediatrics at Children's Mercy Hospital in Kansas City, I left practice in November, 2012. Six weeks later I was diagnosed with acute myeloid leukemia (AML), unfortunately an aggressive resistant variety. After multiple bone marrow biopsies and rounds of chemotherapy, the blast cells remained stubborn, defiant, and aggressive. I had a bone marrow transplant in June 2013 but the AML persists. I am presently receiving "bridge chemo" and anxiously awaiting bone marrow results. Leukemic blast activity will determine therapy: continue bridge chemo or, if appropriate, enter an experimental research study. I can also hope for what some would call a "miracle cure" and others would call "unexplained spontaneous remission" of my AML. As a physician and realist, I have accepted it is likely I have an incurable disease.

My last option would be to emulate "Charlie" the orthopedist and "Torch" (Dr. Murray's cousin) who chose to "do nothing" medically or surgically aggressive, and enjoy my remaining time on earth with friends and family. Dr. Murray's comments are very reassuring to me and create a lodestar to help navigate through the path I must choose with my illness.

It is worth repeating: "For all the time physicians spend fending off death of others, they tend to be fairly serene when faced with death themselves." Thank you Dr. Murray!

Gary S. Wasserman, DO
MSMA member since 1976
Professor Emeritus, Department of Pediatrics, University of Missouri-School of Medicine
Kansas City, Missouri

On Death & Dying

Congratulations to John Hagan, Editor, on your recent edition of *Missouri Medicine*. The topic is both timely and courageous as the all-too-prevalent denial of death culture in America needed to be addressed. You are an excellent writer and, as my residents will tell you, I am a critical editor.

I especially enjoyed your own poignant article on "Medical Metaphysics…" describing how the experiences of death of those close to you impacted your life and beliefs. There's a "gift" in such experiences somewhere, the secret is to find it—and I believe you did. Also, as an Ethics Committee Chair for 20-plus years, I can attest that you did a great job presenting scenarios in which the course of "best action" was left a bit open to provoke reflection in the thoughtful reader.

I always appreciate the quality of your columns. Thanks for the time and effort you devote to *Missouri Medicine* and to our profession of medicine.

Larry Rues, MD
MSMA member since 1978
Clinical Professor of Family Medicine
University of Missouri - Kansas City
Kansas City, Missouri

CDC Physician Comments Raise Concern: Post-Antibiotic Era Not Here Yet

In comments on televised on PBS, Arjun Srinivasan, MD, Associate Director of the Centers for Disease Control and Prevention declared, "We're in the post-antibiotic era.[1]" In his highly publicized and sensationalized comments, he has raised considerable distress and concern in the general public and many physicians.

Doctor Srinivasan's declaration of the victory of microbes over present and future antibiotic development is premature. The battle between "bugs and drugs" continues. His statement is reminiscent


"As physicians, we have so many unknowns coming our way...
One thing I am certain about is my malpractice protection."
Medicine is feeling the effects of regulatory and legislative changes, increasing risk, and profitability demands—all contributing to an atmosphere of uncertainty and lack of control.
What we do control as physicians:
our choice of a liability partner.
I selected ProAssurance because they stand behind my good medicine and understand my business decisions. In spite of the maelstrom of change, I am protected, respected, and heard.
I believe in fair treatment—and I get it.
ProAssurance
Treated Fairly
Ward's 50
2007-2013
7 Years Running
Professional Liability Insurance & Risk Management Services
ProAssurance Group is rated A+ (Superior) by A.M. Best.
ProAssurance.com • 800.282.6242

Correspondence, continued

of the assertion made several decades ago by another 'authority' declaring that the end of infections was at hand. That long ago authority was asserting that we had enough antibiotics in our armamentarium to treat most, if not all, present and future infections. The new "defeat' assertion is probably wrong and time has proved the second "victory" assertion definitely wrong.

There is some truth in Dr. Srinivasan's comments. We are indeed seeing more resistant organisms like MRSA with high MIC to vancomycin; multi-drug resistant Pseudomonas aeruginosa and carbapenemase-resistant Enterobacteriaceae. There are times we have to resort to older antibiotics like colistin which has significant toxicities.

While alarming, there are measures being taken to prevent antibiotics from being rendered ineffective against infections. Antibiotic [antimicrobial] stewardship is a major step towards this goal. It refers to interventions designed to improve and measure the appropriate use of antibiotics. It begins by determination if antibiotics are needed. It entails selecting the appropriate antibiotic dose, duration and route. It minimizes toxicity and limits the selection for antibiotic resistant strains. Every professional medical society is very cognizant of the growing antibiotic resistance problem. There is concerted effort to find new solutions to the old problem of antibiotic resistance. In this digital age, even the public is aware of this global problem and there is a growing involvement in the dialogue. Hopefully our patients will be less demanding of antibiotics for viral illnesses and other inappropriate uses.

I believe antibiotic resistance is a serious problem but we still have time to institute some paradigm changing stratagems to deal with this threat. It's not too late, but the clock is ticking.

Eden M. Esguerra, MD
MSMA member since 1995
Missouri Medicine Editorial Board: Infectious Disease
Joplin, Missouri

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1. http://www.pbs.org/wgbh/pages/frontline/health-science-technology/hunting-the-nightmare-bacteria/dr-arjun-srinivasan-weve-reached-the-end-of-antibiotics-period/

Errata

Figure 3 in the September/October 2013 *Missouri Medicine* article, "Non-assigned Medicare Payment Increases Practice Revenue & Lowers Medicare Costs" units on the ordinate should be in billions not thousands.

1 Picture = 1,000 Words



Practice in a health model of the future.

Mercy in Arkansas, Kansas, Missouri and Oklahoma, is seeking BC/BE physicians to join thriving practices. Positions offer an excellent benefits package including health, dental, and vision benefits, life insurance, vacation and CME, retirement plan and more. Available opportunities may include:

- Anesthesia
- Cardiology
- Dermatology
- Critical Care
- CV/CT Surgery
- Emergency Medicine
- Endocrinology
- Family Medicine
- Gastroenterology
- General Surgery
- Gynecologic Oncology
- Head and Neck Surgery
- Hematology/Oncology
- Hospitalist
- Nocturnist
- Infectious Disease
- Internal Medicine
- Maternal Fetal Medicine
- Neonatology
- Neurology
- Neurosurgery
- OB/GYN – Traditional
- OB/GYN Hospitalist
- Occupational Medicine
- Ophthalmology
- Optometry
- Oral & Maxillofacial Surgery
- Orthopedic Surgery
- Otolaryngology
- Pain Management
- Pathology
- Plastic Surgery
- Podiatry
- Psychiatry
- Pediatrics
- Pediatric Emergency Medicine
- Pediatric Endocrinology
- Pediatric GI
- Pediatric Hem/Onc
- Pediatric Internal Medicine
- Pediatric Neurology
- Pediatric Surgery
- Pediatric Urgent Care
- Physical Medicine and Rehabilitation
- Pulmonology/Critical Care/Sleep Medicine
- Radiation Oncology
- Radiology-Interventional
- Rheumatology
- Robotics
- Trauma Surgery
- Urology
- Vascular Surgery

For more information, please contact: Angie Abraham, MBA
Executive Director of Physician Recruitment • Mercy Clinic
Phone: 877-880-6650 | Fax: 888-290-8300
Email: angie.abraham@mercy.net

AA/EOE

Mercy

Good News from MSMA Members

Missouri Medicine announces new Editorial Board members, selected on the basis of exceptional professional accomplishments, and eminence in their fields of expertise.



John A. Pardalos, MD, MSMA member since 1998, has accepted the position of Neonatology Medicine Board Member. Dr. Pardalos is the Medical Director of the Division of Neonatology at Children's Hospital at University Hospital and Clinics in Columbia, Mo., and also an Associate Professor in the Department of Child Health there. He replaces Elizabeth James, MD, who retired from this position.



Ann M. Romaker, MD, FACCP, ACP, MSMA member since 1992, has accepted the position of Sleep Medicine Board Member. Dr. Romaker is President of Romaker and Associates specializing in sleep/wake disorders and pulmonary medicine with St. Luke's Hospital in Kansas City, Overland Park, and Lee's Summit. She is also chair of the MSMA Council. This is a new position for the Editorial Board.

D.K. Allcorn, MD, MSMA member since 1980, Lincoln, contributed to financing for a trip which allowed a pre-med student, Garrett Gilbert, to visit Africa with a non-profit group called Humanity for Children.

David Barbe, MD, MSMA member since 1985, serves as President of Mountain Grove Area Community Foundation, and hosted a fundraising event hosted called its "Sweet Summer Soiree" to give to local projects, organizations and scholarships. Dr. Barbe and his wife Debbie also participated in a mission trip to Gonaives, Haiti, in July. In August, Dr. Barbe served on the health panel in the SOAR Conference at Saint Louis University.

Curtis Burton, MD, MSMA member since 1993, Hannibal, was a featured speaker at the Missouri Ambulatory Surgery Center Association meeting on "Total Joint Replacement in an Outpatient Setting."

Jennifer Conley, MD, MSMA member since 2003, Nevada, hosted Daniel Lovinger, MSMA member since 2012, also of Nevada, in a one-month preceptorship as a second-year medical student at University of Missouri to acquaint him with rural health care delivery.

Jeffrey Copeland, MD, MSMA member since 1988, St. Peters, has been elected to another term serving on the Primaris Board. He also MSMA President Elect.

Matthew Deedy, MD, MSMA member since 2007, and Valerie Rader, MD, MSMA member since 2012, both of Kansas City, participated in a free community even about cardiac disorders and care at Western Missouri Medical Center.

Michael DePriest, MD, MSMA member since 1982, St. Joseph, received the Morton-Stuber 2013 Physician Award. He has accepted referrals from the Social Welfare Board for more than 20 years and provides care to an average of two Social Welfare Board patients per month.

Al Elbendary, MD, MSMA member since 2000, St. Louis, completed a 1,562-mile marathon motorcycle ride in raising funds for women with gynecological cancer.

Francisco Garriga, MD, MSMA member since 1976, Bridgeton, was the Medical Honoree at the St. Louis Arthritis Awareness Walk. He is also author of the book, "Tell Me How You Die Easy."

The 2013 Metropolitan Medical Society Lifetime Achievement Award was given to **Robert T. Gibbons, MD**, MSMA member since 1977 during the MetroMed Annual Meeting in October. Dr. Gibbons is employed by the Anesthesia Associates of Kansas City and is the medical director of the Surgicenter of Johnson County. The 2013 Metropolitan Medical Society Lifetime Achievement Award was given to **Lawrence A. Rues, MD, FAAFP,** MSMA member since 1977, for his lifetime commitment to the health and well being of the Kansas City community.

Erica Gillette, MD, MSMA member since 2013, Fairfax, became board certified in family practice and brought the concept of a patient-centered medical home to her practice at Community Hospital in Fairfax. She provided an opportunity to T.J. Smolik, a medical student at the University of Missouri-Columbia, to experience family practice in a rural community.

Gordon Goldman, MD, MSMA member since 1976, Creve Coeur, and Gregory Terpstra, MD, MSMA member since 1997, Potosi, sponsored a 5K Road Race and Fun Run in Potosi Park.

David Guss, MD, MSMA member since 2004, Washington, earned a three-year recognition from the National Committee for Quality Assurance for providing quality care to patients with cardiovascular disease or who have suffered a stroke.

Terry Hall, MD, MSMA member since 1980, Bethany, met with the public and discussed services available at the new Gilman City Medical Clinic during an open house.

Joel D. Hassien, MD, MSMA member since 1988, Hannibal, has been inducted as a Fellow in the American College of Radiology.

Robb Hicks, MD, MSMA member since 2012, and Emergency Medicine physician in Creve Couer, Mo., recently spent one week in Honduras on a medical mission trip with the Global Health Outreach, the missions arm of the Christian Medical and Dental Association.

He was accompanied by a team of five physicians, one dentist and 20 nurses, pharmacists, medical students, pastors, and support personnel who saw 900 patients, including 400 children, and performed 43 surgeries in Tela, the area's only public hospital. The group focused on meeting the health and spiritual needs of the Honduran people in a variety of locales, including makeshift clinics set up in an unused school, in the federal prison chapel, and even on the beach one afternoon.

Karen B. Hopkins, MD, MSMA member since 2013, Richland, is now certified in both pediatrics and internal medicine.

B.D. Howell, MD, MSMA member since 1977, Brookfield, was honored at Serve Link Hospice and Homecare for 20 years of service, where they hosted a retirement open house for him.

James Johnson, DO, MSMA member since 2013, Kansas City, was honored with the fourth annual Physician Excellence Award during Cass Regional's Nurses Week.

Richard Johnston, MD, MSMA member since 1991, St. Louis, presented on the "Hot Topics in Hip Replacement" at Sullivan High School's Theater.

Teresa L Knight, MD, MSMA member since 2002, St. Louis, spoke about ovarian cancer in observation of National Ovarian Cancer Awareness Month for the St. Louis Ovarian Cancer Awareness organization.

Charles Lichty, MD, MSMA member since 1977, Shelbina, has been chosen as the Region 9 Missouri Outstanding Older Worker. He began practice in 1956 and continues to work at least 25 hours per week.

Priscilla Long, MD, MSMA member since 1983, Hannibal, has been elected a Fellow of the American College of Physicians, the society of internists.

Brian Mahaffey, MD, MSMA member since 1999, *Missouri Medicine* Editorial Board Member for Sports Medicine, and a family/sports medicine physician in Springfield, Mo., with Mercy Clinics, will be working with both the St. Louis Cardinals and serving as the minor league care liaison. **Victor Wilson, MD**, MSMA member since 2010, and **Richard Seagrave, MD**, MSMA member since 2004, will also be working on the Cardinals orthopedic team.

Lauren Miles, MSMA member since 2012, Columbia, is a medical student at the University of Missouri shadowing **Aron Burke, MD**, MSMA member since 2006, Rock Port, at his family practice clinic and during patient rounds and surgeries at Community Hospital-Fairfax. Dr. Burke was presented with the 2013 Family Physician of the Year Award by the Missouri Academy of Family Physicians.

Scott Murphy, MD, MSMA member since 2006, and **Jim Murphy, MD**, MSMA member since 1977, both of Murphy-Watson-Burr Eye Center in St. Joseph, were honored with the Morton-Stuber Award, as this physician group of providers has given care to an average of 100 Social Welfare Board patients free of charge.

Pranav Parikh, MD, FCCP, MSMA member since 2000, Hannibal, was designated a Certified Physician Executive by the Certifying Commission in Medical Management. He also serves as a member of the Steering Committee for the Regional Community Health Needs Assessment in Hannibal.

Sunthosh V. Parvathaneni, MD, MSMA member since 2013, Springfield, was inducted as a Fellow of the Heart Rhythm Society and presented his research and clinical experience at their scientific sessions.

Alan Rauba, MD, member since 1997, Jefferson City, has been recognized by the National Committee for Quality Assurance and the American Diabetes Association for providing quality care to his patients.

Matt Riffle, MD, MSMA member since 2010, Poplar Bluff, organized a Free Physical Night at Poplar Bluff Athletic Department, giving 250 physicals to the students and athletes.

Ann Riggs, DO, MSMA member since 2013, Platte City, has dedicated her time and profession to providing primary care and traditional family services - absent of insurance - in a new medical office named Direct Medical Care in Platte City.

IN THE NEWS

Jeffrey Sanders, MD, MSMA member since 2003, Jefferson City, has completed requirements to maintain board certification in interventional cardiology for the American Board of Internal Medicine. He also maintains a board certification in internal medicine, cardiovascular disease and nuclear cardiology.

James Spadaro, MD, MSMA member since 1989, Fenton, performed the first percutaneous coronary intervention at Phelps County Regional Medical Center.

John Spertus, MD, MPH, MSMA member since 2008, Weston, was named the recipient of the American Heart Association's Council on Quality of Care and Outcomes Research Distinguished Achievement Award for contributions to the field.

William V. Stoecker, MD, MSMA member since 1984, Rolla, has been instrumental in developing a spider bite test, along with Jonathan Green, an associate professor of animal science at UMC. They have had success with their tests, are currently seeking FDA approval and would like to see them in emergency rooms and dermatologist offices.

Keith Thomae, MD, MSMA member since 2012, Highland, Ill., was a featured speaker at the 8th Annual Cosmetic Conference hosted by the National Society of Cosmetic Physicians.

Austin Tinsley, MD, MSMA member since 2007, Poplar Bluff, has been recognized by the Board of Registration for the Healing Arts with two framed documents commemorating his 40 years in practice.

Paul H. Young, MD, MSMA member since 1982, St. Louis, presented on the anatomy of the brain to students at Affton High School in Project Lead the Way Biomedical program.

Stanley Ziomek, MD, MSMA member since 2006, Poplar Bluff, received international recognition from the International School of Cardiac Surgery, particularly in the Coronary Artery Byass process.

In Memoriam



William Henry Poggemeier, Jr., MD, MSMA member since 1977 and Honorary Vice Presient, passed away on September 5. He received a Master's Degree in Chemistry from the University of Illinois, and served 1 year in the United States Army as a chemist. He then entered the University of Illinois School of Medicine in Chicago.

After graduation from the University of Illinois School of Medicine, in 1951 he came to St. Charles, MO, where he joined Dr. George Kister in General Practice. He joined the staff of St. Joseph Hospital in 1952. He remained in practice in St. Charles, until his retirement in May of 1998.

Dr. Poggemeier was involved in many professional activities, including volunteering as a physician in a medical clinic in Kinloch, MO, and the Volunteers in Medicine clinic in St. Charles. He additionally was the Staff Physician for the Emmaus Home in St. Charles for over 30 years. After the American Board of Family Practice was established in 1969, Dr. Poggemeier was a member of the first group to sit for the exam, successfully becoming one of the first to be Board Certified in the new specialty of Family Practice.

For many years he served on the faculty of the University of Missouri School of Medicine as a preceptor for medical students from the School of Medicine in the month-long community medicine rotation.

- Julius M. Kantor, MD, 97, Scottsdale, AZ, Pediatric Allergy, March 1, 2013
- Isaac Boniuk, MD, 74, Clayton, Ophthalmology, August 1, 2013
- George H. Ladyman, MD, 84, Williamsville, Radiology, October 21, 2013
- Dugald A. Taylor, MD, 69, Sibley, Pathology, September 18, 2013
- James W. Vaughn, MD, 90, Overland Park, KS, Pathology, October 19, 2013
- Richard L. Bartley, 90, Springfield, Family Practice, October 20, 2013
- William D. Schierman, 87, St. Louis, Internal Medicine, October 20, 2013
- Charles T. Riley, MD, 83, Richmond, Family Practice, October 28, 2013

Omega-3 Polyunsaturated Fatty Acids for the Prevention of Cardiovascular Disease: Do Formulation, Dosage & Comparator Matter?

by James J. DiNicolantonio, PharmD, Pascal Meier, MD, James H. O'Keefe, MD

Olive oil should not be considered a placebo as it has anti-oxidative, anti-inflammatory and anti-platelet effects.



James J. DiNicolantonio, PharmD, (above) is with the Mid America Heart Institute at Saint Luke's Hospital, Kansas City. Pascal Meier, MD, is at the Heart Hospital, University College London Hospitals UCLH, London-UK and at Yale Medical School, New Haven, Ct. James H. O'Keefe, MD, MSMA member since 2003, is with the Mid America Heart Institute at Saint Luke's Hospital and University of Missouri-Kansas City, Kansas City.
Contact: jjdinicol@gmail.com

Abstract

Multiple trials over the past two decades testing omega-3 polyunsaturated fatty acids (PUFAs), containing eicosapentaenoic acid (EPA) and or docosahexaenoic acid (DHA), have shown substantial benefits for reducing major coronary heart disease (CHD) events, all-cause mortality, cardiovascular (CV) death, sudden cardiac death (SCD), and stroke. However, recent trials testing omega-3s have generally failed to confirm these benefits. While increased fish and fish oil intake among the general population, increased use of optimal medical therapy (including statins, aspirin, and modern antihypertensive medications) probably make it more challenging for fish oil supplementation to show additional benefits, there might be further explanations in the formulation, dosage, and comparator used in these recent omega-3 trials.

Introduction

Past trials testing omega-3 polyunsaturated fatty acids (PUFAs) have shown dramatic benefit for reducing all-cause mortality, cardiovascular (CV) mortality, sudden cardiac death (SCD), major coronary heart disease (CHD) events and even stroke.[1-4] However, recent trials have failed to confirm similar benefits. We explore several explanations that could have affected the outcomes of the recently performed omega-3 PUFAs trials.

Olive Oil

Despite the fact that prior omega-3 PUFA trials showed benefit, these past trials did not test omega-3 PUFAs against an olive oil (oleic acid) comparator, whereas at least four of the five recently published omega-3 PUFA trials have used olive oil as the "placebo".[5-9] Indeed, omega-3 PUFAs compared to olive oil in the Risk and Prevention Study did not reduce CV mortality or morbidity (although benefit was seen in the 4,818 women).[9] Another trial testing a similar population as the Risk and Prevention study was the Diet and Omega-3 Intervention Trial (DOIT), a three-year placebo-controlled trial in 563 elderly men at high-risk of CV disease, which showed that 2.4 grams (g) of omega-3 PUFAs (49% EPA and 35% DHA also containing 3.5 mg tocopherols/g) lead to a 47% reduction in all-cause mortality (adjusted HR 0.53, 95% confidence interval: 0.27-

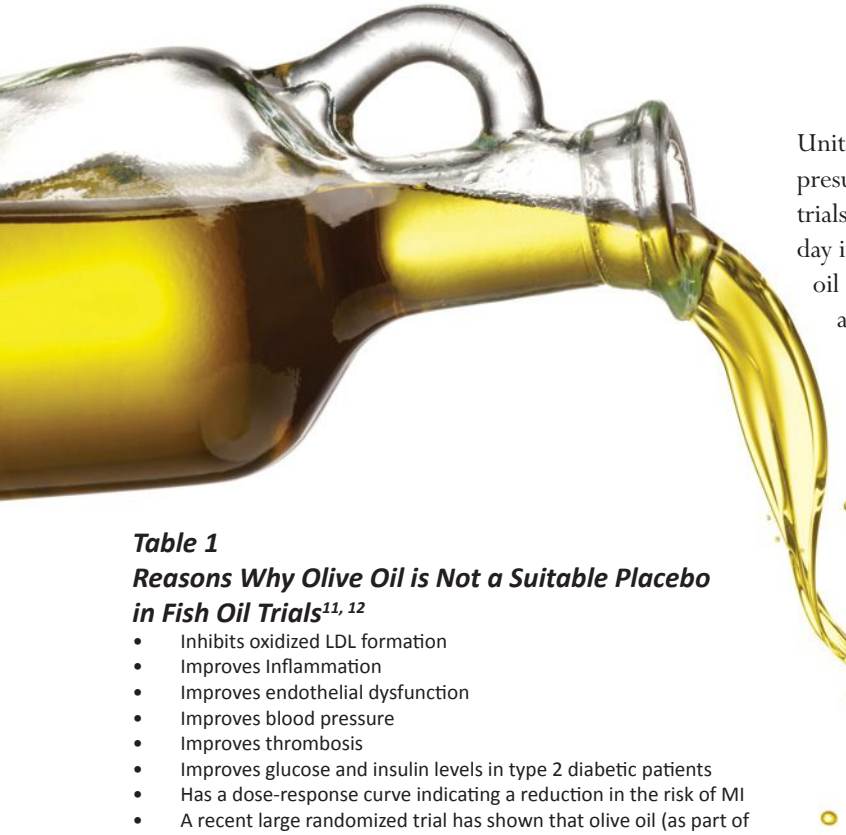


Table 1
Reasons Why Olive Oil is Not a Suitable Placebo in Fish Oil Trials[11, 12]

- Inhibits oxidized LDL formation
- Improves Inflammation
- Improves endothelial dysfunction
- Improves blood pressure
- Improves thrombosis
- Improves glucose and insulin levels in type 2 diabetic patients
- Has a dose-response curve indicating a reduction in the risk of MI
- A recent large randomized trial has shown that olive oil (as part of the Mediterranean Diet) was found to significantly improve long-term cardio-vascular health

1.04, p = 0.063).[10] However, DOIT compared omega-3s to corn oil, whereas the Risk and Prevention Study comparator was olive oil. As omega-6 PUFAs (such as corn oil) are highly prevalent in many societies, whereas monounsaturated fatty acids (MUFAs) (such as oleic acid) are not in great supply, it is unlikely that a corn oil supplement would be considered an "active-comparator." The "placebo" used in Outcome Reduction with Initial Glargine Intervention (ORIGIN) ORIGIN, Effect of Omega 3-Fatty Acids on the Reduction of SCD After Myocardial Infarction (OMEGA) and Study of Omega-3 Fatty Acids and Coronary Mortality (Alpha Omega) was also olive oil, the primary source of fat in the Mediterranean diet, which is associated with a lower risk for CV disease and mortality.[11] Olive oil has been shown to improve oxidized low-density lipoprotein (LDL), inflammation, endothelial dysfunction, blood pressure, and thrombosis and to lower glucose and insulin levels in type 2 diabetic patients.[11] Additionally, the traditional Mediterranean diet, with olive oil being one of the daily staples, has been found in a recent large randomized trial to significantly improve long-term CV health (See Table 1).[12]

Thus, the broad range of anti-atherogenic effects of olive oil could easily offset any potential benefits of omega-3 PUFAs. Moreover, the California and World Olive Oil statistics estimates that the average intake of olive oil in the United States is approximately 1.6 g/day.[13] Thus, it can be presumed that the "placebo" group in the recent fish oil trials was receiving around 2.6 g/day of olive oil vs. 1.6 g/day in the fish oil group. The dose-response curve for olive oil has indicated that from 6.1 g/day to 13.6 g/day there is a 55-61% reduction in myocardial infarction (MI) (odds ratio [OR] 0.39 [0.15-1.00] and 0.45 [0.16-1.25]).[14] Thus, there is an approximate 7.3-8.1% reduction in MI for each gram increase in olive oil ingested from 6.1-13.6 g/day. However, the dose-response curve is probably steeper (more benefit derived) when the intake is closer to zero. This has been shown with fish oil in the primary prevention of CHD death and SCD.[15] Mozaffarian et al. indicated that the steepest dose-response curve for omega-3 PUFAs was from 0 to 250 mg/day of EPA + DHA, with a smaller additional benefit from 250 mg/day to 500 mg/day and virtually no additional benefit beyond 500 mg/day of omega-3 intake.[15] Thus, considering that the intake of olive oil in past "placebo" groups probably increased from 1.6 g to 2.6 g, a much steeper dose-response is expected compared to the benefit/g of increased olive oil from 6.1 g/day to 13.6 g/day. Thus, at a minimum, the olive oil group ("placebo" group) in recent omega-3 PUFAs trials could easily have derived an additional 8% reduction in MI (this being the lowest estimation of benefit), although habitual intake of oleic acid in men from the United Kingdom has been estimated to average around 30 g /day.[16]

By definition, a placebo is a substance with no therapeutic effect. It is obvious that the use of olive oil as a placebo in fish oil trials may carry a therapeutic benefit that could nullify any benefit of omega-3 PUFAs. Considering that just 250 mg of omega-3 PUFAs has been shown to reduce SCD, it is no stretch of the imagination that 1 gram of oleic acid may confer cardioprotection. Thus, the use of olive oil as a "placebo" in omega-3 PUFAs trials could be a contributor to the recent neutrality seen. It is our belief that olive oil should no longer be incorporated into "placebo-controlled trials" but should be thought of as an "active-comparator." Indeed, just 12.5 mg of a hydroxytyrosol-rich extract from water obtained from freshly ground olives has been shown to cause a significant 46% decrease in serum thromboxaneB_2 (TXB_2) production after blood clotting ($P < 0.02$).[17]

Thus, even at low doses, olive oil seems to possess antiplatelet properties. Additionally, olive oil has been shown to reduce LDL susceptibility to oxidation in humans, a process critical in the development of atherosclerosis.[18] While these effects may be partially be explained by the substitution of olive oil for other types of fats (such as PUFAs, saturated fats, and trans-fats) they may also be derived from the plethora of active compounds found within olive oil (polyphenol constituents, i.e. hydroxytirosol and oleuropein) providing an antioxidant effect.

Formulation

Omega-3 PUFAs in nature are bound to triglycerides or phospholipids when obtained from natural sources such as fish or krill, respectively, whereas prescription omega-3 PUFAs (such as Lovaza® formerly known as Omacor®) provide omega-3s in the ethyl-ester form. Unlike free fatty acid forms of omega-3s, which are bound to triglycerides or phospholipids, ethyl-ester omega-3s require a high-fat meal in order to be absorbed appropriately.[19-21] Thus, if patients are not ingesting ethyl-ester omega-3 PUFA supplements with a meal containing fat, they may not be adequately absorbing their omega-3 PUFA supplement. This certainly may have occurred in the recent omega-3 PUFA trials. Moving forward, it seems of utmost importance for trials testing omega-3 PUFAs to measure omega-3 status in red blood cells (not in serum) at baseline and during follow-up, to ascertain chronic omega-3 status in the participants.[22] A potential strategy for future omega-3 PUFA trials would be to ensure that patients are:

1) Not already omega-3 replete at baseline - and thus the participants may not derive benefit from additional omega-3 PUFA supplementation;

2) Ascertain if patients who obtain higher omega-3 levels in their red blood cells derive a larger benefit;

3) Determine if a particular omega-3 red blood cell level (overall percentage but also ratios of different PUFAs contained within phospholipids) correlates with a reduction in a particular endpoint (i.e. lower levels with a reduction in SCD versus higher levels showing a reduction in stroke or MI).

Importantly, omega-3 PUFA trials have not been keen to measure omega-3 status in red blood cells of their participants. Thus, it is possible that the "placebo" group in these trials were already omega-3 replete.

Dose

As indicated above, ingestion of 250-500 mg of EPA/DHA seems to derive most of the benefits of omega-3 PUFAs in regards to a reduction in SCD.[15] Importantly, omega-3 PUFA intake seems to have increased from past years, around 0-46 mg/day, and have now increased to approximately 210 mg/day of baseline EPA/DHA intake seen in the ORIGIN trial.[7,23] Thus, it would not be expected for omega-3 PUFA supplementation to reduce the risk of SCD in recent trials with such a high baseline omega-3 PUFA intake. Additionally, the reduction in SCD may be driving a reduction in CV/all-cause mortality with omega-3 PUFAs. Thus, these latter endpoints would also not be expected to be reduced in trials with such a high baseline intake of omega-3s.

Lifelong intakes of high omega-3 PUFAs, as seen in the traditional Inuit and the Japanese, may confer protection against CV events. Moreover, 1.8 g of EPA in The Japan Eicosapentaenoic Acid Lipid Intervention Study (JELIS) trial did reduce major CHD events and stroke (even on top of a high baseline intake of fish and concomitant statin therapy). However, recent trials have generally only tested 1 g of EPA/DHA or less.[5-9] Importantly, higher doses of omega-3 PUFAs (> 1 g/day) may be required to derive a reduction in MI and stroke. Moreover, 1.20–1.85 g/day of EPA/DHA has been shown to reduce infarct size[24] and 3.3 g of EPA/DHA/day for 3 months followed by 1.65 g/day of EPA/DHA for 21 months has shown anti-atherosclerotic effects (i.e. less progression and more regression of coronary atherosclerosis).[25] Indeed, Japanese type 2 diabetic patients given 1.8 g of EPA showed a significant improvement in carotid intima-media thickness and brachial-ankle pulse wave velocity. Thus, doses in the range of 1.5-3.0 g/day of omega-3 PUFAs may be required to obtain a reduction in atherosclerosis and arterial stiffening. Additionally, 1.485 g/day of EPA/DHA has been shown to reduce the inflammatory burden of atherosclerotic plaques even when compared to 1.55 g of oleic acid/day, which might be expected to increase plaque stability.[16] Lastly, compared to sunflower oil (3.6 g/day of linoleic acid), 1.4 g of long-chain omega-3 PUFAs led to stabilization of atherosclerotic plaques.[26] This was shown by reductions in macrophages in plaques, fewer thin fibrous caps and signs of inflammation, and more plaques with thick fibrous caps and no signs of

inflammation in the omega-3 vs. the omega-6 group. Thus, doses above 1 gram of omega-3 PUFAs may be required to prevent an acute MI caused by rupture of an unstable plaque and future omega-3 PUFA trials may need to test higher doses of omega-3 PUFAs to prove the concept.

Conclusions

In summary, recent omega-3 PUFAs trials have included patients with higher baseline intakes of omega-3 PUFAs, which may prevent the benefit of additional supplemental omega-3 PUFAs for reducing SCD, CV death and all-cause mortality. Moreover, recent trials have included oleic acid (olive oil) as a comparator, which may derive cardioprotection, and thus, should not be considered a "placebo." Lastly, omega-3 PUFA doses given in recent trials may not be high enough to achieve plaque regression/stabilization, and thus, the possible benefit of omega-3 PUFAs on reducing MIs and strokes may not be able to be obtained with such low doses. Further trials should include true placebo comparators, higher doses of omega-3 PUFAs (in the 1.5-3 g range), should measure red blood cell omega-3 content, and ensure that supplementation of omega-3 ethyl-ester dosage forms are being ingested concomitantly with a meal containing fat to provide proper absorption.

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Obesity: The 'Huge' Problem in Cardiovascular Diseases

by M. Javed Ashraf, MD, MPH & Paramdeep Baweja, MD

Overweight and obesity are the fastest-growing causes of morbidity and death in America and currently are attributable in an estimated 400,000 deaths annually.



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Abstract

Obesity is an epidemic in the United States. It is an independent risk factor for cardiovascular diseases and associated with reduced life expectancy. The adverse effects are related to direct impact of obesity on cardiovascular system and indirectly through its influence on risk factors. Excessive accumulation of adipose tissue in the myocardium leads to structural and functional alteration. In addition, numerous hormones secreted by adipose tissue create pro-inflammatory and prothrombotic state. This predisposes to coronary heart disease, heart failure, and sudden death. Even those with normal weight but excessive body fat are at risk. Weight reduction and exercise are the main therapeutic options.

Introduction

Obesity is an epidemic in the United States and other western countries. It is prevalent among all age groups and races.[1] In adults, weight is defined by body mass index (BMI) which is an index of weight-for-height (kg/m^2). BMI is commonly used to classify overweight and obesity (See Table 1). Currently more than 50% Americans are overweight and nearly one-third are obese, and these numbers are on the rise. Data from National Health and Nutrition Examination Survey (NHANES) show that among adults aged 20–74 years the prevalence of obesity increased from 15.0% in 1980 to 32.9% in 2004. Several factors including personal behavior towards diet and physical activity, environmental factors, and genetics contribute to the development of obesity. Overweight and obesity are the fastest-growing causes of morbidity and death in America and currently are attributable in an estimated 400,000 deaths annually.[2] Obesity is a major risk factor for cardiovascular disease and is associated with the development of heart failure, coronary heart disease, sudden cardiac death, atrial fibrillation, and impacts overall survival.[3] This article reviews the impact of obesity on cardiovascular disease with emphasis on its pathophysiology, clinical effects in obese patients, and also elaborates on the impact of weight loss on the cardiovascular system.

Obesity exerts its adverse cardiovascular effects in a number of

ways. Obesity is associated with increased prevalence of hypertension (HTN), dyslipidemia, metabolic syndrome, type 2 diabetes mellitus (type 2 DM), and sleep apnea. There are a number of direct adverse effects of obesity on the heart and the cardiovascular system. Obesity also indirectly affects the cardiovascular system through influencing associated risk factors as well as the effects from sleep disorders associated with obesity.

Table 1
Body Mass Index & Classifications

BMI	Classification
Less than 18.5	Under weight
18.5 – 24.9	Normal weight
25.0 – 29.9	Overweight
30.1 – 39.9	Obese
More than 40	Morbid obese

Pathophysiology

Increase in adipose tissue or body fat, is a hallmark of obesity (See Figure 1). Adipose tissue is a specialized connective tissue that functions as the major storage site for body fat in the form of triglycerides. Adipose tissue is considered as the energy store of the body as well as acts as a mechanical cushion and insulates various body parts. In recent years, adipose tissue's function as an endocrine organ has been of increasing interest to researchers. Adipose tissue functions like a major endocrine organ producing numerous bioactive peptides, called "adipokines." These include leptin, chemerin, resistin, and various cytokines such as tumor necrosis factor alpha (TNFα) and interleukin 6 (IL6).[4,5] Adipokines act on different organs and regulate energy balance, immunity, insulin sensitivity, angiogenesis, blood pressure, lipid metabolism, and hemostasis. In obesity, an increased level of adipokines creates an imbalance of different physiological functions which are ultimately linked with cardiovascular diseases. Leptin, in particular, controls the balance between food intake and energy metabolism.[6] Increase secretion of leptin by excessive adipose tissue in obesity induces insulin resistance and causes metabolic syndrome which predispose to adverse cardiovascular effects.[7] Increase in activity of TNFα and IL6 causes an increased inflammatory response in the adipose tissue. This results in the creation of a pro-inflammatory and prothrombotic state causing endothelial damage and vascular hypertrophy. The increased inflammatory activity is reflected by an increase in C-reactive protein (CRP) levels in obese patients and is associated with adverse cardiac events. Obesity is also associated with increased plasma renin and aldosterone activity, as well as elevated insulin levels which promote left ventricular hypertrophy (LVH).[8]

In obesity, due to excess adipose tissue the total blood volume increases. This results in increased stroke volume, and cardiac output. The increased cardiac output in obese patients is to meet the metabolic demand of the excess adipose tissue. Although the heart rate is higher in obese individuals due to increased sympathetic activation, the increased cardiac output is related to an increase in stroke volume.[9] The left ventricle dilates to accommodate the increased venous return and, in turn, becomes hypertrophic. In contrast to concentric LVH observed in hypertensive patients, the eccentric LVH is more common among morbidly obese patients. Eccentric LVH is characterized by an increase in LV cavity volume that is greater than the increase in the wall thickness and is an effect of increased cardiac output in obese subjects to meet the metabolic demand of excessive adipose tissue.

In obese subjects, in spite of lower peripheral vascular resistance; the Frank Starling curve is shifted to left because of increased wall stress related to increase in LV volume. The left atrium dilates as a result of increased circulating blood volume and a higher left ventricle diastolic filling pressure. The dilated left atrium and elevated LV filling pressure increase the risk of heart failure and atrial fibrillation. Alteration in myocardial structure due to fatty tissue infiltration predisposes to conduction abnormalities and ventricle arrhythmias[10,11] which further potentiate heart failure.

Coronary artery disease

Obesity accelerates the atherosclerotic process especially in adolescents and young adults. The atherosclerotic plaque burden is higher in the carotid arteries of asymptomatic obese patients compared to those with normal weight. Post mortem studies of young

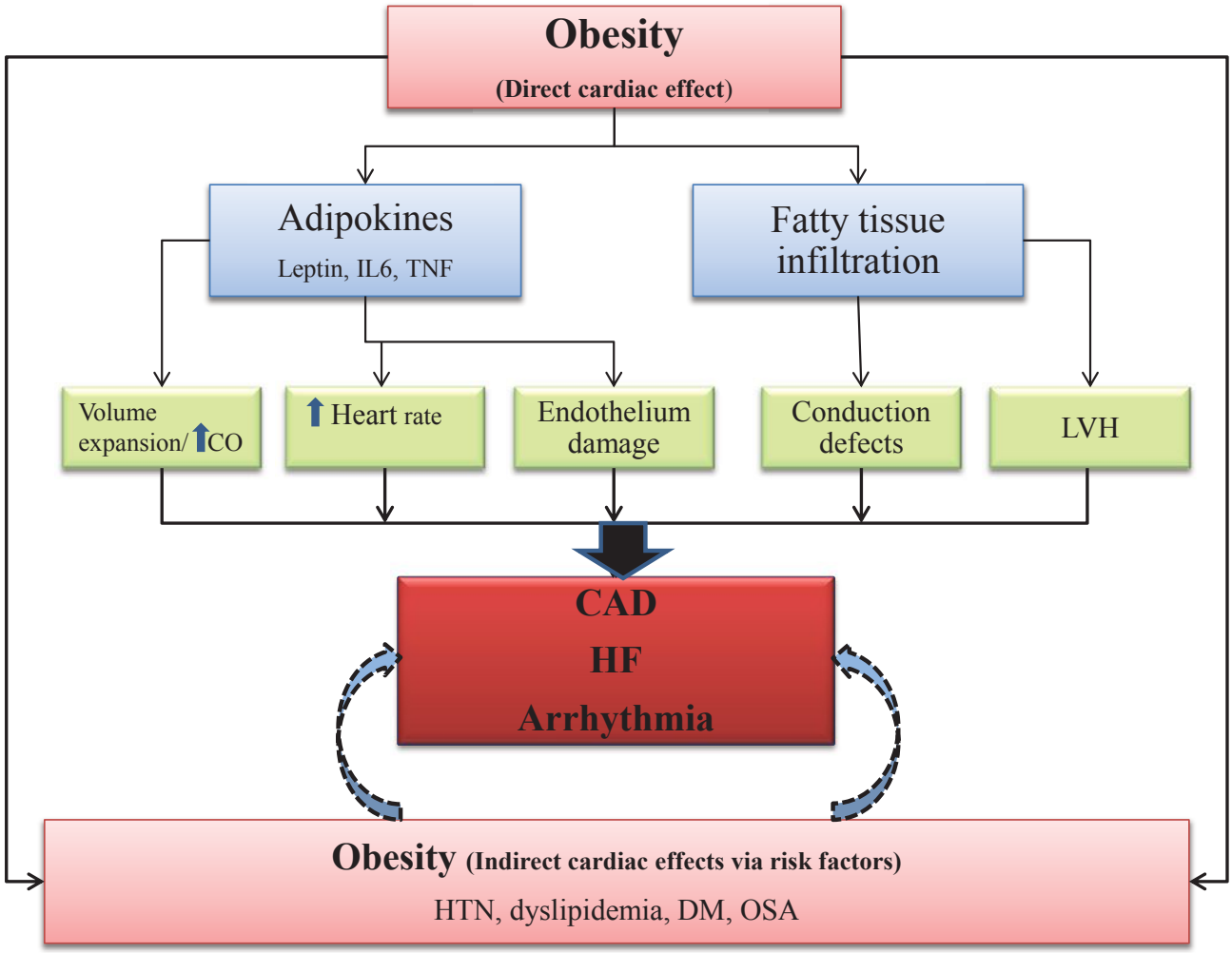


Figure 1. Effect of obesity on cardiovascular system – pathophysiology
CO, cardiac out put; HTN, hypertension; OSA, obstructive sleep apnea; DM , diabetes mellitus; IL6, Interleukin 6; TNF, tumor necrosis factor; HF, heart failure.

and middle-age obese patients who died of accidental causes revealed not only increase atherosclerotic burden in the vasculature but also ulcerated plaques in coronary arteries and their severity correlated with abdominal fat and body mass index (BMI).[12] In obese patients, atherosclerosis is more pronounced and is independent of traditional risk factors. The atherosclerotic plaque in obese people has higher prevalence of macrophages and other inflammatory cells indicating an ongoing active process. Obesity leads not only to increased fat in typical adipose tissue locations but also to significant lipid deposits within and around other organs, a phenomenon called "ectopic fat storage." Accumulation of excessive fat around blood vessels (perivascular fat) may enhance the atherosclerosis process by increased secretion of proatherogenic cytokines and smooth muscle cell growth factors. In addition, perivascular fat could mechanically increase the vascular stiffness observed in obese patients.

In three long term land mark cardiovascular studies, Framingham heart study,[13] Manitoba study,[14] and Harvard public health nurses study,[15] obesity remains an independent predictor of coronary artery disease (CAD). In the Framingham heart study, after 26 years of follow-up, those younger than 50 years and obese experienced twice the risk of coronary disease compared with the normal weight group.

Clinical presentation of CAD in obese patients may be very atypical due to a number of reasons

including an altered or impaired pain sensation related to associated type 2 diabetes mellitus. Dyspnea on exertion, a symptom of CAD, may be misinterpreted as shortness of air simply due to being overweight. Obese patients with severe CAD who undergo coronary artery bypass graft surgery (CABG) may do poorly due to an increased risk of post-operative complications including thromboembolism, and infections of the sternum, and saphenous vein harvest sites.[16]

Cardiomyopathy (Adipositas Cordis) & Heart Failure

Obesity directly increases the risk of restrictive cardiomyopathy and heart failure due to diastolic dysfunction. The myocardial fibers are infiltrated by fatty tissue in patients with obesity causing myocardial structural change and dysfunction of atria and ventricles. The exact mechanism is not well understood, however, it has been reported that by virtue of the process of metaplasia myocardial cells are replaced by fatty cells.[17] The myocardial cells may actually degenerate as a result of pressure effect of adipose tissue predisposing them to fibrosis. Histologically small irregular aggregates and bands of adipose tissue separate myocardial cells. This phenomenon is further enhanced by an inflammatory process related to excess secretion of adipokines. This process of fatty infiltration may eventually cause restrictive cardiomyopathy.[18] Increased pericardial fat content is a marker increased risk of cardiomyopathy and worse cardiac outcomes.

People with sedentary life style and those who are obese have more pericardial fat compared to individuals with normal weight and those who are active in routine life.

Dilated cardiomyopathy in obese patients is less common and is presumably related to concomitant cardiac arrhythmias, hypertension and coronary artery disease. However, it is associated with worse outcomes due to increased risk of arrhythmia related sudden death in patients with morbid obesity. In obese patients, increased cardiac output, LVH, and restrictive cardiomyopathy as a result of fatty tissue accumulation, predispose to the development of clinical syndrome of heart failure. The indirect effects from associated risk factors, HTN and sleep apnea further supplement the risk of development of the heart failure syndrome. The risk of clinical heart failure in one study increased by 5% for each increment of one unit of BMI.[19]

Cardiac Arrhythmia

Obese patients are at an increased risk of developing arrhythmias and sudden death, even in the absence of cardiac dysfunction. This phenomenon is seen in both genders. A prolonged QT is associated with obesity and may result in fatal ventricular arrhythmias. Atrial fibrillation (AF) as stated previously is also more common in obese patients. AF is likely a result of increased intra-cardiac pressures and atrial dilatation. Associated HTN and sleep apnea may enhance the risk of atrial arrhythmias. The exact mechanism of QT prolongation remains unclear; however, elevated free fatty acids related to obesity may affect cardiac repolarization. A high glucose level can promote increased vasomotor tone and ventricular arrhythmias. In addition dilated cardiomyopathy associated with obesity may induce fatal arrhythmias. Obesity also affects the autonomic nervous system. In particular morbid obesity is associated with a decline in parasympathetic tone resulting in an increase in mean heart rate. A 10% weight loss is associated with significant improvement in autonomic nervous system tone and associated tachycardia.[20]

Normal Weight Obesity

In recent years a new concept of "Normal Weight Obesity" has emerged and shown to be a better predictor of cardiovascular outcomes compared to BMI alone.[21] BMI has traditionally been used as a measure of obesity. Using BMI as a surrogate of obesity has many advantage such as simplicity, ease of administration and reproducibility. However, BMI does not differentiate between elevated body fat content and the amount of lean mass. Body fat content of more than 25% in men and 30% in women of normal BMI is considered as obese.[22] Normal weight obesity (NWO) is associated with metabolic syndrome and the prevalence is similar to the prevalence of metabolic syndrome among overweight and obese people.[23] People with abdominal obesity and normal weight have more atherosclerotic plaque than those who have smaller waist-to-hip ratios. The issue of NWO becomes even more of a concern as there are estimated to be about 30 million Americans with NWO who may not be aware of their increased cardiovascular risk because these people are not obese otherwise and are likely to perceive themselves as healthy.

Table 2
Examples of Moderate Physical Activity

Routine Activities		Sports Activities
Washing and waxing a car for 45–60 minutes	Less Intense (more time)	Playing volleyball for 45–60 minutes
Washing windows or floors for 45–60 minutes		Playing touch football for 45 minutes
Gardening for 30–45 minutes		Walking 13/4 miles in 35 minutes (20 min/mile)
Wheeling self in wheelchair for 30–40 minutes		Basketball (shooting baskets) for 30 minutes
Pushing a stroller 11/2 miles in 30 minutes		Bicycling 5 miles in 30 minutes
Raking leaves for 30 minutes		Dancing fast (social) for 30 minutes
Walking 2 miles in 30 minutes (15 min/mile)		Water aerobics for 30 minutes
Shoveling snow for 15 minutes		Swimming laps for 20 minutes
Stair walking for 15 minutes		Basketball (playing a game) for 15–20 minutes
	More Intense (less time)	Jumping rope for 15 minutes
		Running 11/2 miles in 15 minutes (10 min/mile)

Obesity Paradox

Despite the fact that obesity is associated with numerous complications and reduced survival, a number of recent studies have revealed a better prognosis among obese patients who were diagnosed with cardiovascular diseases, the "obesity paradox."[24] It simply means there is lower mortality among obese patients who are diagnosed with cardiovascular pathology compared to the ones with normal weight. This has somewhat confused and contradicted the established concept of obesity and associated increased morbidity and mortality. Most of the studies addressing the obesity paradox were limited to a single baseline measure of weight and the effect of weight change was not measured over time. In addition BMI, the traditional tool to measure obesity, did not differentiate between weight loss due to muscle wasting versus that of fat depletion.

Jonathan Myers and colleagues[25] in their prospective study with a seven-year follow-up period demonstrated that the obesity paradox phenomenon was partly explained by weight loss associated with conditions linked to muscular wasting. Loss of muscle mass has a significant and independent relationship to all-cause mortality. The higher mortality among patients with lower BMI was due to cancer, advanced COPD and worsening heart failure. The lower BMI was in fact a result of loss of total muscle mass. The authors suggest the higher mortality was due to weight losing conditions like cancer, COPD and advance heart failure may have contributed to the obesity paradox. Irrespective of data suggesting obesity paradox, individuals who are physically fit have better survival and fewer cardiovascular events than individuals with decreased fitness level.

Cardiovascular Impact of Weight Reduction & Physical Activity

Weight reduction has dramatic effects on the cardiovascular status of obese people. A structured weight loss program prevents the unwanted cardiovascular effects of obesity.[26] Dietary modification and increased physical activity under an organized exercise program promotes a negative energy balance causing reduction in adipose tissue and a decrease in levels of adipokines. Weight reduction and exercise further decrease plasma levels of leptin, therefore reducing adverse cardiovascular outcomes. Weight reduction also decreases plasma renin - aldosterone activity and insulin levels resulting in significant improvement of left ventricular wall thickness and its function. Lifestyle interventions, including exercise training and weight loss with caloric restriction showed nearly a 60% reduction in the risk of developing type 2 DM.[27] Moderate intensity physical activity for at least 30 minutes on most days of the week should be goal for every individual. Examples of moderate intensity physical activities are listed in Table 2 and one can choose activities that they enjoy and fit into their daily routine schedule.

Behavioral therapy is important to enhance dietary and exercise compliance. The overall clinical response is an improvement of peripheral vascular resistance, decrease in stroke volume, decreased filling

pressures and most importantly a decrease in systemic and pulmonary pressures. In obese patients with heart failure, despite the obesity paradox, weight loss can induce improvements in LV mass as well as in systolic and diastolic ventricular function.

Surgically-induced weight loss is helpful to reduce adverse cardiovascular outcomes in morbidly obese patients who have exhausted other options.[28] In contrast to the old data of increased 30-day mortality after gastric bypass surgery, recent studies are more promising, showing short and long-term improvements in morbidity and all-cause mortality after weight reduction surgical procedures.

Conclusion

Obesity is a chronic metabolic disorder associated with increased cardiovascular morbidity and mortality. The direct cardiovascular effects of obesity are related to an increase in secretion of various adipokines from excessive adipose tissue. In addition obesity indirectly accelerates the process of atherosclerosis and heart failure due to its impact on associated risk factors including hypertension, dyslipidemia, type 2 DM and obstructive sleep apnea. Because of simplicity and ease of administration, BMI remains the usual clinical tool to screen and estimate obesity in routine clinical practice, however, the emerging concept of normal weight obesity stresses the need of body fat estimation especially in those with normal BMI. Life style modifications including weight reduction and exercise remain the main therapeutic option to reduce obesity and related cardiovascular adverse effects.

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Disclosure

None reported.

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The Burden of Chronic Diseases in Missouri: Progress and Challenges

by Shumei Yun, MD, Noaman Kayani, PhD, Sherri Homan, PhD, Jiaqing Li, MD, Arthur Pashi, PhD, David McBride, PhD & Janet Wilson, MEd

Missouri's prevalence of smoking, physical inactivity, inadequate fruit and vegetable consumption, obesity, hypertension, high cholesterol and diabetes are all higher than other U.S. states.



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Abstract

Chronic diseases are the major causes of premature death, disability and loss of quality of life in Missouri. The prevalence of many chronic diseases, conditions and risk behaviors is greater in Missouri than the U.S. The medical costs for treating chronic diseases are a burden on the state's economy and will increase as the population ages. Prevention and control of chronic diseases is essential to the physical and economic health of Missourians.

Introduction

Chronic diseases are defined by the Centers for Disease Control and Prevention (CDC) as those diseases that are prolonged, do not resolve spontaneously, and for which a complete cure is rarely achieved.[1] According to the World Health Organization (WHO), chronic diseases such as cancer, heart disease and diabetes have reached global epidemic proportions and now cause more deaths than all other diseases combined.[2]

In the United States, almost one out of every two adults has at least one chronic illness, and more than one in four has multiple concurrent chronic conditions. These diseases cause major limitations in daily living for almost one out of ten Americans or about 25 million people. They account for almost 70% of all deaths in the U.S., which is about 1.7 million each year. Chronic diseases are costly. More than 75% of health care spending is on people with chronic conditions. The burden that chronic disease places on our population and economy is particularly striking since most chronic diseases are preventable.

The objectives of this report are to describe the burden, trends, and disparities in chronic diseases in Missouri, identify progress in reducing the burden and disparities in the last decade, and highlight challenges ahead in chronic disease prevention and management.

Data Sources

The prevalence of chronic diseases/conditions and risk factors was estimated using the Behavioral Risk Factor Surveillance System (BRFSS) data for 2000-10 and Missouri County Level Study data for 2011. Mortality, hospitalization, emergency room visit, and cancer incidence data were obtained from the Missouri Information for Community Assessment (MICA) for Missouri and from CDC WONDER for the nation.[3]

Key Findings: Chronic Diseases and Risk Factors in Missouri

Death & Premature Death with Chronic Diseases as Underlying Causes

In Missouri, chronic diseases are major causes of death. In 2010, 55,054 Missourians died and about 71% of the deaths were due to chronic diseases. Heart disease was the number one killer, accounting for 25.0% of all deaths; followed by cancer, 22.8%; chronic lower respiratory disease, 6.4%; cerebrovascular disease (stroke), 5.4%; and diabetes, 2.6%. In total, these five causes accounted for 62.2% of all deaths in Missouri in 2010 (See Figure 1).[4]

Chronic diseases are also major causes of premature death in Missouri. Deaths before the age of 65 are considered premature. In 2010, about 59% of premature deaths (14,827) were due to chronic diseases. Cancer was the number one cause of premature deaths, accounting for more than 26.2% of the premature deaths; followed by heart disease, accounting for about 19.9% (See Figure 2).[4]

The death rates for heart disease, cancer, stroke, and diabetes declined significantly in the last decade in Missouri among all four racial and gender groups: white men, white women, African-American men and African-American women. However, the death rates were higher in Missouri than in the U.S. African-Americans had higher death rates than whites for all chronic diseases except for chronic lower respiratory diseases.

Prevalence of Selected Chronic Diseases & Conditions

A high percentage of Missouri adults had chronic diseases and conditions and the prevalence was higher in Missouri than in the U.S., except for vision impairment, which was slightly lower than that in the U.S. (See Table 1). In addition, about three in four Missouri adults (74.4%) had at least one of the 13 chronic diseases/conditions included in table 1; more than one in two (51.7%) had at least two chronic diseases/conditions, more than one in three (34.5%) had at least three, more than one in five (21.7%) had at least four, and more than one in eight(12.9%) had at least five.[5]

The percentage of people with chronic diseases/conditions was on the rise in Missouri in the last decade. The prevalence of obesity has increased on average at about one percentage point per year, hypertension 1.8 percentage points, diabetes 0.3 percentage points, and asthma 0.1 percentage points per year. African-Americans had a significantly higher prevalence of obesity, hypertension, diabetes, and asthma than whites, but a significantly lower prevalence of high cholesterol.[6]

Emergency Room Visits

When chronic diseases are not well managed and controlled, emergency room (ER) visits and hospitalizations are more likely. In Missouri during 2009, the age-adjusted ER visit rate per 1,000 population for heart disease was 12.8, 5.6 for COPD, and 5.1 for asthma. During the past decade, the ER visit rates increased significantly for heart disease and COPD, and decreased significantly for asthma in Missouri. African-Americans had significantly higher ER visit rates for all three diseases than whites.[7]

Hospitalizations

In Missouri in 2009, the age-adjusted hospitalization rate per 10,000 population for heart disease was 136.8, for cancer 36.2, for osteoarthritis 29.3, for stroke 28.9, for COPD 23.9, for diabetes 17.4, and for asthma 13.5. These diseases led to more than $6.0 billion in hospital charges, including more than $3.6 billion in charges to Medicare and $518 million in charges to Medicaid.[8]

From 2000 to 2009, the rates for heart disease and stroke declined significantly among white men and women, but not among African-American men and women. The age-adjusted hospitalization rates for asthma and diabetes increased significantly among African-American men and women. The rates for osteoarthritis increased significantly in Missouri for all four racial and gender groups. The hospitalization rates among African-Americans were significantly higher than among whites for heart disease, stroke, asthma, and diabetes, but lower than whites for osteoarthritis.[9]

Prevalence of Risk Behaviors

Chronic diseases share the common risk behaviors of smoking, lack of physical activity, unhealthy diets and heavy drinking. Among Missouri adults in 2011, 23.0% were current smokers, 23.7% were physically inactive, 87.4% did not consume fruits and vegetables five or more times per day, and 7.3% were heavy drinkers as defined by females drinking more than one alcoholic drink per day and males drinking more than two drinks per day (See Table 1). The prevalence of physical inactivity was higher among African-Americans than among whites.[4] Overall, 88.0% of adults had at least one of the four risk behaviors, 41.8% had at least two, and 10.7% had at least three. The prevalence of these risk behaviors was higher in Missouri than in the U.S. (See Table 1).[5]

Table 1

Prevalence of Selected Chronic Disease Indicators among Adults, Missouri and US, 2011

Indicators	Missouri		US	
	Prevalence (%)	95% CI[7]	Prevalence (%)	95% CI
Selected Chronic Diseases/conditions[1]				
High Cholesterol	39.7	38.6 - 40.7	38.5	38.2 - 38.8
Hypertension	34.3	33.5 - 35.2	31.5	31.3 - 31.8
Obesity[2]	30.2	29.3 - 31.0	27.4	27.2 - 27.7
Arthritis	29.4	28.6 - 30.2	24.9	24.6 - 25.1
Depressive Disorders	20.6	19.9 - 21.4	16.8	16.6 - 17.0
Vision Impairment[3]	18.5	17.8 - 19.2	19.4	19.2 - 19.6
Diabetes	10.7	10.1 - 11.2	9.8	9.6 - 9.9
Asthma	10.2	9.6 - 10.8	8.7	8.6 - 8.9
Cancer[4]	12.6	11.6 - 13.6	11.1	11.0 - 11.3
COPD	8.1	7.6 - 8.5	6.4	6.2 - 6.5
Heart Attack	5.4	5.0 - 5.8	4.3	4.2 - 4.4
Stroke	3.8	3.5 - 4.1	2.9	2.8 - 3.0
Kidney Disease	2.6	2.3 - 2.8	2.5	2.4 - 2.6
Selected Risk Behaviors				
Smoking	25.0	23.4 - 26.5	20.1	19.9 - 20.4
Physical Inactivity	28.4	26.8 - 30.0	25.4	25.2 - 25.7
F&V <5Times per Day[5]	85.9	84.7 - 87.2	82.8	82.6 - 83.1
Heavy Drinking[4]	7.3	6.2 - 8.3	6.6	6.5 - 6.8

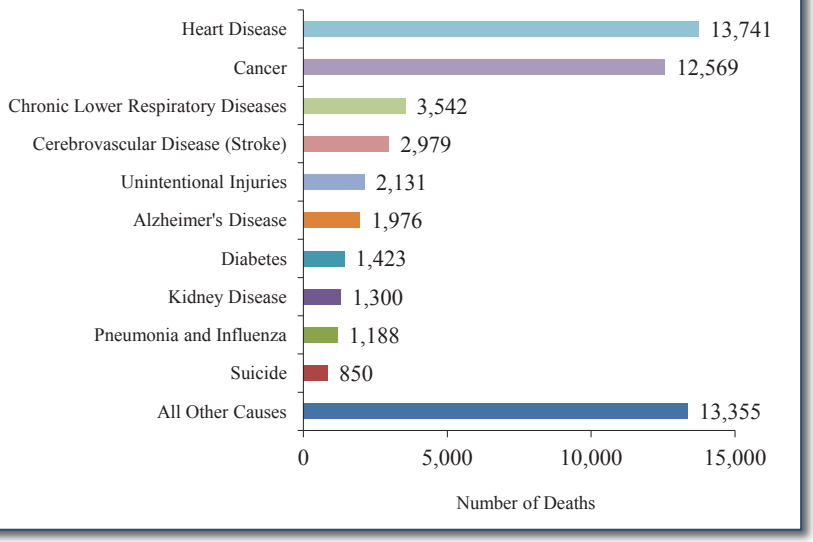
[1]Ever been told by health professionals as having these diseases/conditions among adults age 18 or older, estimated using self-reported data collected through telephone interviews. These diseases/conditions were selected based on the burden of the diseases and availability of the data.
[2]Based on self-reported height and weight data collected through telephone interviews. Obesity is now classified as a disease by the American Medical Association.
[3]Vision impairment even after wearing glasses
[4] Both Missouri and US data are from the 2011 Behavioral Risk Factor Surveillance System (BRFSS).
[5]Fruit and vegetable consumption less than five times per day
[6]Defined as drinking more than one alcoholic drink per day for females and more than two drinks per day for males.
[7]Confidence interval
Data sources: The 2011 County-level study (CLS) data are used for Missouri. US data are from the 2011 BRFSS. The two data sources are comparable except for cancer.

Early Detection, Care & Self-management of Chronic Diseases in Missouri

Screening & Early Detection

Screening and early detection are important for detecting diseases at an early and treatable stage. For cervical and colorectal cancers, screening is also a preventive measure. In 2010, 71.3% of women age 40 or older had a mammogram within the past two years in Missouri, compared to 75.2% in the U.S. About 80.1% of Missouri women age 18 or older had a Pap test within the past three years, compared to 81.3% in the U.S. The prevalence of ever having had a sigmoidoscopy or colonoscopy among adults age 50 or older was 65.2% in Missouri, the same as the U.S.[6]

Figure 1
Leading Causes of Death in Missouri, 2010



Chronic Diseases Care & Management

High quality medical care and management are important for people with chronic diseases. In 2011, among Missouri adults with diabetes, 73.5% had two or more hemoglobin A1C tests in the last year, significantly higher than the U.S. prevalence of 68.7%; 75.3% had their feet examined by a doctor in the last year compared to 74.5% in the U.S.; 68.8% had an annual dilated eye exam, slightly lower than the U.S. prevalence of 70.3%; 61.2% had a seasonal flu vaccination in the last year, significantly higher than the U.S. prevalence of 53.5%; and 57.4% ever had a pneumococcal vaccination, similar to the 58.2% in the U.S.[5]

Self-Management of Chronic Diseases

When people develop a chronic disease, self-management is very important for preventing complications and exacerbations, and improving the quality of life. In 2011, among Missouri adults with diabetes, 56.3% had ever taken a diabetes self-management class to manage their diabetes, compaired to the U.S. prevalence of 52.2%. Eleven percent (10.8) of Missouri adults with arthritis had ever taken a class to learn how to manage their arthritis compared to 12.5% in the U.S.[5]

Maintaining a healthy life style is especially important for people with chronic diseases in order to prevent complications. However, many people with chronic diseases continue to engage in risky behavior. In 2011, among adults with diabetes in Missouri, 19.0% were current smokers, 42.4% were physically inactive, and 77.3% were not consuming fruits and vegetables five or more times per day. Among adults with arthritis, 38.4% were physically inactive. About one in four stroke survivors (26.1%), heart attack survivors (24.0%) or asthmatic adults (27.9%) were current smokers. [5]

Social Determinants of Health & Chronic Diseases

The social determinants of health are the circumstances in which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics. The WHO Commission on Social Determinants of Health concluded in 2008 that the social conditions are the single most important determinant of one's health status. [10]

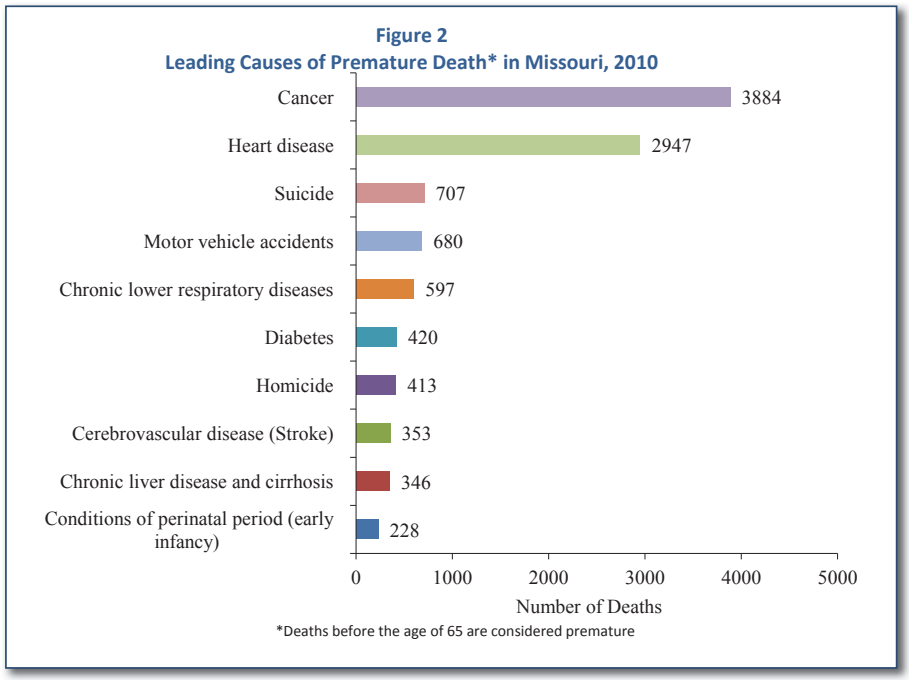
Income & Education

There is a positive association between income and health. Individuals in poverty have the worst health indicators, including the prevalence of chronic diseases, conditions, risk behaviors, preventive care practices, health care coverage, and living environments. In 2011, 15.8% or 920,118 Missourians lived in a family with a household income below poverty level (i.e. $22,811 per year for a family of four in 2011).[11]

Education matters for health. In general, individuals with less education have more health problems and shorter life expectancies. In contrast, people with more years of education are likely to have longer and healthier lives. In 2011, a high proportion of Missouri adults with less than a high school education lived in an environment that was unsafe and lacked access to healthy foods. The proportion decreased as the education level increased. A similar pattern was observed for the prevalence of risk behaviors, lack of preventive care, poor general health, and chronic diseases and conditions. [4] In 2011, the proportion of Missouri adults aged 25 or older without a high school diploma was 31.4%, compared to 28.4% nationally.[11]

Income and education levels vary geographically in Missouri. Counties in the southeast region, especially those in the Bootheel area, have a higher proportion of

population living in poverty and/or without a high school diploma. Overall, the 2011 poverty rate was more than twice as high among African-Americans as among whites (39% vs. 15% in Missouri and 35% vs. 13% nationally).[11]



Urbanization

It was estimated that about 56.1% of the Missouri adult population lived in urban core areas, 13.5% in sub-urban areas, 12.9% in large rural towns and 17.5% in small rural towns or isolated rural areas in 2010.[5, 10] Communities at different urbanization levels differ in their environmental, demographic, social and economic characteristics, and these characteristics greatly influence the magnitude and types of health problems communities face.

A higher proportion of Missouri adults living in a small town or isolated rural area lacked access to healthy foods in their neighborhood, had no health care coverage, did not meet cancer screening guidelines, engaged in risk behaviors, and had a higher prevalence of chronic diseases (arthritis, diabetes, COPD, cancer, and vision impairment) compared to residents living in other areas.[5] In contrast, a higher proportion of adults living in the urban core areas had asthma and also considered their neighborhood to be somewhat unsafe or extremely unsafe compared to adults living in other areas.

Sexual Orientation

Lesbian, gay, bisexual, and transgender (LGBT) individuals are becoming more visible and acknowledged in society. Studies have found some significant health disparities between heterosexual and LGBT adults. It was estimated that about 0.8% of Missouri adult women were lesbian, 1.6% of men were gay, 0.7% of men and 1.1% of women were bisexual, and 0.1% were transgender individuals in 2011.[5] In Missouri, LGBT individuals were more likely than heterosexuals to smoke (32.1% vs. 23.1%), have a depressive disorder (36.9% vs. 20.1%), consider their neighborhood to be somewhat or extremely unsafe (30.0% vs. 19.2%), and have activity limitations (34.5% vs. 23.1%).[5]

Progress in the Last Decade

Decreased Burden

Significant progress has been made in Missouri in the last decade. The age-adjusted mortality rates decreased significantly from 2000 to 2009 for heart disease by 30%, all-cancer by 10.9% among men and by 6.2% among women, lung cancer among men by 10.1%, female breast cancer by 10.8%, prostate cancer among men by 25.4%, colorectal cancer by 17.2% among men and by 19.9% among women, cerebrovascular disease by 31.0% and diabetes by 20.3%.[4]

Hospitalizations and Emergency Room Visits

From 2000 to 2009, age-adjusted hospitalization rates decreased significantly in Missouri for heart disease by 18.7% and for cerebrovascular disease by 19.0%; age-adjusted asthma ER visit rates decreased by 5.6%.[7, 9]

Cancer Incidence

From 2000 to 2008, the age-adjusted incidence rates decreased significantly in Missouri for all-cancer

by 7.8% among men and by 2.0% among women; for lung cancer by 11.5% among men; for colorectal cancer by 22.1% among white men, by 22.8% among white women, and by 17.6% among African-American men; and for cervical cancer by 28.3%. [13]

Prevalence of Chronic Diseases & Conditions

There has been little to no progress during the last decade in reducing the prevalence of chronic diseases and conditions. In fact the prevalence has increased for most chronic diseases and conditions.

Prevalence of Risk Behaviors

From 2000 to 2010 among adult Missourians, the prevalence of smoking decreased by 22.1%, the percentage of adults not meeting CDC's physical activity recommendations decreased by 17.2%, and the prevalence of heavy drinking among African-American men decreased by 90.8%.[6] From 2001 to 2009, the prevalence of smoking among high school students decreased by 37.6% and from 2003 to 2011, it decreased by 38.6% among middle school students. [14]

Improvement in Cancer Screening & Chronic Disease Care and Self-management

From 2001 to 2010, the prevalence of ever having had a sigmoidoscopy or colonoscopy among adults age 50 years or older increased by 51.6%; the percentage of adults with diabetes who have ever attended a diabetes self-management class increased by 33.0%; the percentage of African-American men with diabetes who had a flu shot in the last year increased by 453.0% and the percentage who had ever had a pneumococcal vaccination increased by 273.1%.[6]

Reduced Disparities

From 2000 to 2009, racial disparities declined in age-adjusted rates for diabetes mortality, all-cancer mortality, lung cancer mortality among men, breast cancer mortality among women, lung cancer incidence among men and cervical cancer incidence among women.[6]

Challenges Ahead

Missouri faces tremendous challenges in chronic disease prevention and control. The burden of chronic diseases in Missouri is likely to grow as the population ages and the prevalence of obesity and associated chronic conditions increase. In addition, there are substantial racial/ethnic and socioeconomic disparities in Missouri. Minorities and people of lower socioeconomic status are disproportionately affected by chronic diseases. Furthermore, funding for chronic disease prevention and control is limited.

Aging Population

The rapid aging of the population is among the major public health challenges faced in chronic disease prevention and control as older adults are disproportionately affected by chronic diseases, which are associated with disability, diminished quality of life, and increased costs for health care and long-term care. In Missouri in 2011, about 95% of seniors age 65 and older had at least one of the 13 aforementioned chronic diseases or conditions, more than 80% had at least two, and about 65% had at least three.

The proportion of seniors in Missouri's population was 13.5% in 2000 and increased to 14.0% in 2010. As the first baby boomers turned 65 in 2011, it began a period of even faster growth of the senior population. It is estimated that by 2030, Missouri's senior population will increase to 21.0%.[15] In addition, the proportion of senior population in Missouri has been and will be continuously higher than the nation overall.

High & Increasing Burden

Compared to the U.S. overall, Missouri has a higher burden of almost all chronic diseases, conditions, and risk behaviors. Missouri's prevalence of smoking, physical inactivity, inadequate fruit and vegetable consumption, obesity, hypertension, high cholesterol and diabetes are all higher than the U.S. Furthermore, the prevalence of obesity, hypertension and diabetes are increasing significantly over time in Missouri, and at a faster pace than the U.S. Without effective chronic disease prevention and control interventions, the high prevalence of risk factors and chronic conditions will likely lead to increases in emergency room visits, hospitalizations, medical care spending, disabilities, poor quality of life, lost productivity and deaths.

Racial/Ethnic & Socioeconomic Disparities

There are substantial racial/ethnic and socioeconomic disparities, and in certain cases, the disparities are increasing in Missouri. Minorities and people of lower socioeconomic status have a higher burden of most chronic diseases, conditions, and risk behaviors. Currently a relatively limited number of evidence-based interventions have been identified to address the social determinants of health. However, economic development, political will, and well-coordinated efforts from multiple sectors are crucial elements for reducing health disparities and improving





Chronic diseases share the common risk behaviors of smoking, lack of physical activity, unhealthy diets and heavy drinking.

overall population health. Unfortunately, these conditions are hard to attain and many are out of the control of public health professionals.

Conclusion

The health and economic burden of chronic diseases is tremendous in Missouri, and it is likely to grow as the population ages and the prevalence of obesity and associated conditions increases. Adequate funding is needed to effectively address the challenges of reducing the burden and disparities of chronic diseases among Missouri residents. Evidence has shown that chronic disease prevention is cost effective.[16] Investing in chronic disease prevention is not only the economically smart thing to do; it is the right thing to do.

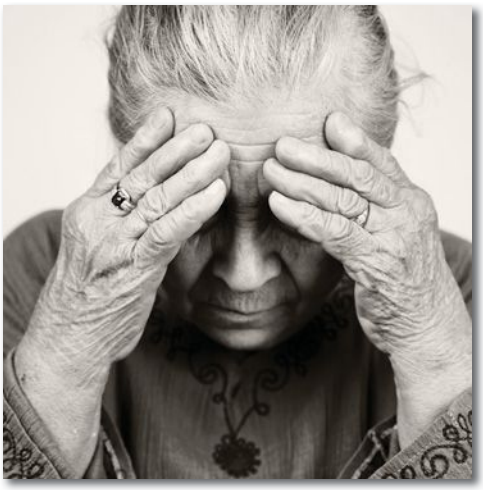
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Disclosure

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MM



Elder Abuse: Golden Years' Lost Luster

by Angela M. Sanford, MD & Julie K. Gammack, MD

Failure to report elder abuse is actually a Class A misdemeanor and laws are in place to protect the identity of the reporter.



Angela M. Sanford, MD, (above), MSMA member since 2013, is Assistant Professor of Geriatrics, and Julie K. Gammack, MD, is an Associate Professor of Geriatrics, and Assistant Dean of Graduate Medical Education, in the Division of Geriatric Medicine, Department of Internal Medicine at the Saint Louis University School of Medicine in St. Louis.
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Case Presentation

Ms. CS was an 87-year old Ukranian female with moderate dementia and hypertension admitted to the geriatric psychiatry service after police found her to be living in deplorable conditions. The patient had been residing with an adult son who had been diagnosed with schizoaffective disorder and was also a "hoarder." A daughter who lived out of town had notified the State Department of Health and Senior Services, which, following an investigation, had informed the police, who had the patient removed from her home due to "unfit" living conditions. The patient presented to the psychiatric service disheveled and unkempt and was unable to give a reliable history.

The patient's durable power of attorney (DPOA) was a second adult son who reportedly came to town infrequently and confiscated the patient's money from her bank account. During his mother's hospitalization, the son called several times demanding information and insisting that his mother be discharged. Because the state was investigating possible elder abuse, no information was provided to any of the patient's children. The mentally ill son (and caregiver) had been hospitalized for acute psychosis six months previously and at that time, the DPOA was asked to approve home health services for his mother. The DPOA refused all services that required any out of pocket expenses, even though Ms. CS received a sizable monthly social security check that would have more than covered the expenses for additional care. At that time, a social worker placed a call to the State Department of Health and Senior Services, but it was not known whether an investigation took place.

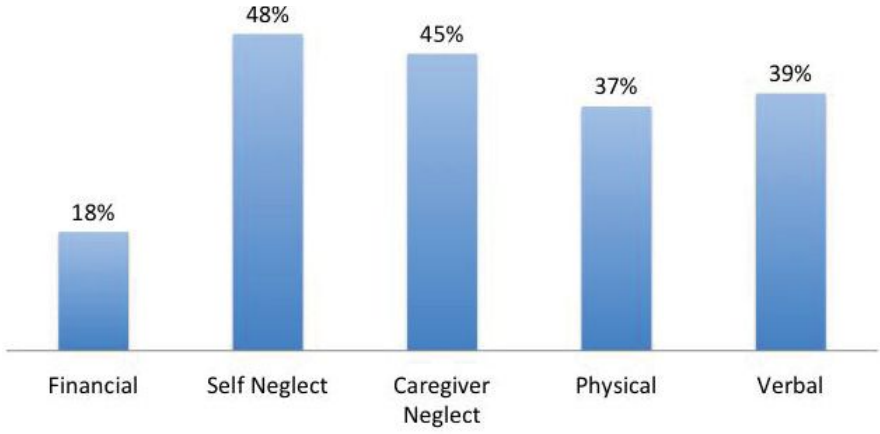
It was determined that both elder neglect and financial abuse were highly suspect. Formal neuropsychiatric testing revealed that Ms. CS's cognitive defects were severe enough to warrant twenty-four hour supervision and that she lacked decisional capacity. She remained hospitalized while the state completed their investigation. The state subsequently assumed guardianship and the patient was discharged to a long-term care nursing facility.

Definition and Epidemiology

The World Health Organization defines elder abuse as a "single, or repeated act, or lack of appropriate action, occurring within any relationship where there is an expectation of trust which causes harm or distress to an older person."[1] Elder abuse is an all-encompassing term and can be used to describe physical, sexual, psychological, and

financial abuse or neglect. In the United States, as many as 1 in 10 elderly adults have experienced some form of elder abuse.[2] Likewise, in the state of Missouri, there were over 17,000 cases of elder abuse reported to the Department of Health and Senior services in 2011 and these numbers have increased by nearly 10% over the past five years.[3] It is unclear whether the incidence of elder abuse is truly rising or if heightened public awareness has led to an increase in reporting of suspected cases. Despite more cases being brought to the attention of the State, these cases likely represent only the tip of the iceberg, as elder abuse is a problem that is globally under-reported and grossly underestimated.

Figure 1
Types of Abuse Mose Frequently Reported in MIsouri Elders (2011)



Data obtained from Missouri Department of Health and Senior Services. Abuse, Neglect and Financial Exploitation of Missouri's Elderly and Adults with Disabilities. Fiscal Year 2011. PDF. 1-16

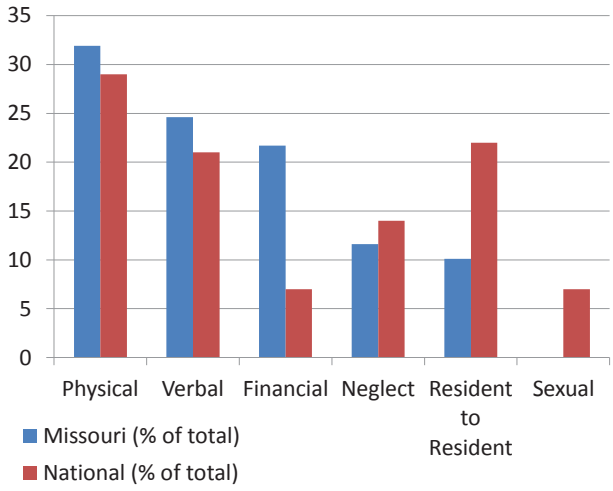
Risk factors for elder abuse are multifaceted and must be viewed in the context of the setting in which the abuse occurs, the relationship between the caregiver and care receiver, individual characteristics of the caregiver and care receiver, and socio-cultural factors. For instance, abuse that occurs in institutional settings is more prevalent in those institutions where staff are poorly trained and over-worked. Abuse is also more prevalent when standards for health care are low and policies governing the institution favor the interests of the institution rather than those of the residents.[4] Caregivers are more likely to mistreat the older adult if the caregiver is male, is financially dependent on the elder, or has an ongoing psychiatric illness, including caregiver burnout, depression, or substance abuse. Factors that predispose the victim to mistreatment include frailty, older age, female gender, social isolation, impairment in activities of daily living, and cognitive impairment, particularly with behavioral difficulties. Trans-generational abuse is also relatively common and represents a cycle of abuse in which a parent abuses a child and years later, the child abuses the parent who has then become dependent or in need of care.[5] Additionally, socio-cultural factors may influence the likelihood of abuse. For example, in societies where elderly persons are depicted as frail, weak, and dependent, maltreatment may be more prevalent than in societies where the elderly are venerated and highly respected.

Types of Abuse

Several forms of abuse are encompassed by the umbrella phrase "elder abuse," the most commonly reported type being self-neglect. Elder self-neglect may present in a variety of ways and with varying severity and is distinct from caregiver neglect. It is suspected when the elder displays noncompliance with treatment and medications, poor personal hygiene, lives in squalor or hoards belongings, or does not provide him or herself with adequate nourishment. It is often seen concurrently with chronic illness, cognitive impairment, social isolation, and mental health issues, including substance abuse.[6] Additionally, many victims lack insight into the dangers of poor self-care, which compounds the already present health and safety risks of self-neglect. Those that do have insight often consider their living conditions and self-care as a "lifestyle" choice and feel it is within their right to live as they please.

Following self-neglect, in descending order of frequency, are caregiver neglect, psychological (verbal) abuse, physical abuse, financial abuse, and lastly, sexual abuse (See Figure 1). Caregiver neglect can be intentional or unintentional and occurs when the caregiver fails to provide adequate nutrition, clothing, or shelter for the elderly individual. It can also consist of failure to administer medications, provide wound care or prohibit the person from receiving adequate medical services. Some signs suggestive of caregiver neglect that may be seen at a regular medical appointment include disheveled or dirty clothing, poor hygiene, cachexia or weight loss, improper medication

Figure 2
Types of Abuse in Long-Term Care Facilities (2010)



usage, decubitus ulcers, caregiver absence from the appointment, delays in seeking treatment, or inconsistent follow-up.[7]

Psychological abuse is the second most common form of elder abuse after neglect. It often consists of purposeful verbal or nonverbal infliction of emotional or mental anguish. Examples of psychological abuse or mistreatment include humiliation, threats, coercion, name-calling, insulting, putting down, or making demeaning jokes directed at the elderly person[8]. Enforcing social isolation or controlling contact with others outside of the caregiver-care receiver relationship are also forms of psychological abuse.

Financial abuse or exploitation can occur when the victim is forced or coerced to sign legal paperwork, including power of attorney forms, without understanding the ramifications of their signature. Checking or savings accounts, credit or debit cards, or even cash may be accessed without the victim's consent or knowledge. Similarly, the victim may be aware of the transactions taking place, but may have been pressured or intimidated into giving consent. The exploitation may occur at the hands of family members, friends, or acquaintances of the victim, as well as by swindlers, who are often unrelated to the victim. As the population of elderly individuals continues to grow in the United States, the concern for financial exploitation has been heightened.[9] In 2009, it was estimated that victims of elder financial abuse lost 2.9 billion dollars and that there was sufficient reason to believe that this represented only a small fraction of true financial loss.[10] Unfortunately, it may be more difficult for elderly victims to gain more assets or redeem their financial losses, as many elders are no longer active in the work force. Additionally, financial exploitation has been a challenging crime to prosecute, as decisional capacity can be difficult to determine retrospectively and is often in question when investigating whether or not the victim truly consented.

In the community, physical and sexual abuse are much less common than other forms of abuse. However, it should be noted that in the nursing home setting, physical abuse is the most commonly reported form of elder abuse[11] (See Figure 2). While the other forms of elder abuse could at times be unintentional, it is difficult to imagine a situation where either physical or sexual abuse could be construed as unintentional. Instances of physical abuse may be manifested as unexplained bruising, welts, lacerations, abrasions, fractures or multiple traumas.[12] The victim may tell various stories in attempt to disguise the abuse and often the accounts are inconsistent with the extent of injuries. At times, it is difficult to detect physical abuse, as the signs may be interpreted as being "common" in older adults such as frequent falling or bruising of fragile skin.[13] Findings suggestive of sexual abuse include genital trauma or overtly sexual talk or offensive sexual language in someone who has cognitive impairment. Sexual contact of any form with a person who lacks capacity to consent may represent sexual abuse and must be thoroughly investigated.

Screening

Unfortunately, there has been no general consensus on screening for elder abuse and few comprehensive guidelines or standardized screening tools have been established. For instance, the United States Preventive Services Task Force concluded in 2013 that the current evidence has been insufficient to assess the benefits and harms of screening all elderly for abuse and neglect.[14] Clinicians at Saint Louis University have developed a mnemonic to assist in screening for elder abuse (See Figure 3).[15] This tool incorporates risk factors for both abuse and neglect. Despite lack of screening tools for elder abuse, several instruments have been developed to screen for caregiver burden, which is a known risk factor for elder abuse. Most notably are the Zarit Burden Interview and Montgomery's Burden Scale.[16]

The detection of elder abuse can at times be very difficult, as signs and symptoms are often vague and misleading. In addition, physicians do not want to misdiagnose or needlessly cause a rift in the relationship between caregiver and care receiver. Victims are often

reluctant to report ongoing abuse, as they do not want to see the abuser, who is often related to them, punished. Also, a victim may fear retribution or possible relocation from their home or to a long-term care facility. All of these factors lead to gross under-reporting and recognition of an important public health issue.

Figure 3

Elder Abuse or Neglect

Risk Factors and "Clue" for Possibility of Neglect or Abuse

N o money or low income
E motion (depression) of either patient or caregiver
G rave illness (cancer, Alzheimer's)
L oss of weight or dehydration
E arlier evidence of neglect or abuse
C ognitive or physical impairment
T oo many or too few doctor/emergency department visits

A lcohol or drug use
B ehavioral problems
U nkempt or poor hygiene
S kin tears, bruises or sores
E asily frightened

Courtesy of Dr. Joseph Flaherty and Dr. Nina Tumosa, authors of Saint Louis University Geriatric Evaluation Mnemonics and Screening Tools (SLU GEMS).

Reporting

Reporting of elder abuse is not federally mandated, but is regulated by state governments. In the state of Missouri, the Department of Health and Senior Services investigates abuse, neglect, and exploitation of individuals either 60 years or older or in persons greater than age 18 with disabilities. Anyone who suspects that an elderly person is being abused may call the state reporting hotline number, but there are several professionals who are mandated by law to report. Examples of mandated reporters include physicians and resident physicians, adult day care workers, dentists, funeral directors/embalmers, home health agency employees, hospital/clinic personnel, law enforcement officers, medical examiners, ministers/clergy, optometrists, pharmacists, physical therapists, social workers, and podiatrists.[17] Failure to report is actually a Class A misdemeanor and laws are in place to protect the identity of the reporter. After a report is filed, the majority of investigations (87%) in Missouri take place within one week, with many taking place within 24 hours, particularly for those victims who are deemed in "imminent" danger.[18] In Missouri, nearly 75% of reported cases have been substantiated following investigation by the Department of Health and Senior Services.

Prevention

As elder abuse is a complex, multifaceted social health problem, strategies for prevention are equally complex and should be applied at many levels. First, on a societal level, public education and awareness are essential. Elder abuse can be a socially taboo subject that is easy to "sweep under the rug," but with global education and social media attention, avenues for discussion of the topic are now opening. For example, in the New York Times from 1999-2003, the ratio of child abuse stories to elder abuse stories was 102:1, indicating a severe lack of media attention regarding the subject.[19] Many authorities believe that health care professionals should receive more adequate and comprehensive training regarding risk factors, detection, and prevention, which may aid in increasing the number of reported cases of elder abuse.

On a community level, caregiver burden must be addressed, as this is one of the most significant risk factors contributing to elder abuse. This is particularly true when the victim has cognitive impairment with behaviors that are difficult to manage.[20] Educating caregivers in management of behavioral challenges and the progressive course of dementia is crucial and may go a long way in prevention. In addition, because both caregiver and care receiver isolation increase the incidence of elder abuse, expansion of social networks and assistance may decrease some of this risk. Examples include enrollment in adult day programs, connecting with local support groups (i.e., The Alzheimer's Association), and involvement in respite programs at local nursing homes.

Finally, encouraging elders to seek help after experiencing abuse is critical in addressing the problem of elder abuse. Advocating for the victim is important, as victims are often reluctant to advocate for themselves and may even believe that they somehow deserve the mistreatment or are a burden because of their dependency on the abuser for care. Some victims, particularly those with dementia, are particularly defenseless and unable to speak up against the abuse. Feelings of guilt, helplessness, worthlessness, and loss of control are common among elder abuse victims, making it a difficult decision to speak up against the abuser.

Outcomes

Research has shown that older adults who have experienced any form of elder abuse have significantly increased rates of all-cause mortality even after controlling for confounding factors, such as medical comorbidities, frailty, and level of cognitive function.[21] Interestingly, death often does not occur directly as a result of injuries sustained by physical abuse, but from comorbid conditions such as cardiovascular disease or neoplasms. Studies have demonstrated a roughly three-fold increase in the rate of hospitalization for individuals with reported elder abuse indicating that abuse confers a much higher rate of health care utilization.[22] Although these patients may seek more medical treatment, it is estimated that physicians report only 2% of all elder abuse and neglect cases.[23] Abuse not only increases rates of mortality and hospitalization, but also undoubtedly has long-standing negative consequences on mental health, quality of life, and even functional status. This may result in even greater dependency on the caregiver, thus further potentiating the cycle of abuse.

Conclusion

Elder abuse in any of its various forms is a violation of fundamental human rights and no form of abuse is less harmful than any other. It is not only associated with increased mortality, but also has a large impact on the quality of life and mental health of its victims. Unfortunately, elder abuse is not always well defined in terms of criteria, screening, prevention, or treatment. However, with the rapidly growing population of elderly individuals, elder abuse could reach epidemic proportions if health care professionals are not vigilant. Physicians must play an important role in identifying and preventing elder abuse and have a responsibility to their patients to combat this grossly under-reported public health problem.

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Disclosure

None reported.

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MORE THAN JUST A PILL

How to Include Psychosocial Approaches in the Treatment of Anxiety & Depressive Disorders



by Anthony Rosenberg & Eric J. Lenze, MD





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Abstract

Anxiety and depressive disorders are the most common psychiatric disorders, causing high personal and economic burden. Psychosocial approaches, such as psychotherapy or mind-body instruction, along with self-help approaches, exercise, and proper sleep hygiene are effective solo or additive (to pharmacotherapy) strategies. Many physicians are less familiar with these methods for treating anxiety/depressive disorders. This article seeks to illuminate psychosocial approaches for depression and anxiety that act additively or independently of pharmacotherapy and explain how physicians can utilize them.

Introduction

Today's society is fast paced, one that values the quick fix. Anxiety and depressive disorders are among the most common conditions treated in the primary care setting. In this setting, the key is that many depressed/anxious individuals are cognizant of antidepressants that are widely prescribed and look to such medications to provide rapid and complete relief from their symptoms. Hence, for most patients the questions that arise are when to use antidepressant medications and whether medication alone is enough to adequately manage people for their depressive or anxiety disorder. Medication alone will not be enough, or even appropriate, for many of these individuals.

A growing body of research indicates that psychosocial approaches such as mindfulness-based stress reduction (MBSR), cognitive-behavioral therapy (CBT), or group psychotherapy are effective both alone and in combination with traditional pharmacotherapy[1]. Other studies support the ideas that exercise, sleep hygiene, and activities that promote self-help are also effective means of treatment in combination with medication, or in lieu[2] (for individuals with milder symptoms or who do not wish to take a pill). The authors of this article hope to demonstrate that treatment of anxiety and depressive disorders in primary care should be comprehensive, meaning inclusive of psychosocial approaches. If individuals have subclinical levels of anxiety or depression and are good candidates who are willing and capable of complying to a treatment regimen (Tables 1 and 2) then treatment should begin with self-help techniques, mind-body techniques, other techniques (exercise, sleep hygiene, light therapy), and traditional psychotherapy, as dictated by symptom severity. If symptom severity rises to clinical levels, then medication and/or additive therapeutic approaches should be used.

Mind-Body Practices & Psychotherapy

This article takes the atypical approach of grouping psychotherapy with mind-body practices such as meditation (usually considered a type of complementary and alternative medicine) as part of a comprehensive treatment plan. Mindfulness is a meditation technique that involves non-judgmental recognition of thoughts and situations as they are in the present moment. Training in mindfulness has been shown to alleviate anxiety and depression in older adults[3] and has been incorporated into psychotherapy as formalized, protocolized instruction. Mindfulness-based cognitive therapy (MBCT) and mindfulness-based stress reduction (MBSR) are two of these types of mindfulness-based therapy and both can be learned/practiced in a group and/or individual setting. A meta-analytic review by Hofmann et al. analyzed 39 studies and showed that mindfulness-based therapy is an effective treatment that reduces symptoms in both anxious and depressed patients.[3] These results may not be diagnosis specific, and the positive effects of MBT are applicable in all types of clinical or daily life situations by altering evaluative or judgmental dispositions.

In a particular study, subjects with anxiety disorders were exposed to a meditation program and compared to a control group that was simply educated on their disorder. MBSR is a therapeutic tool that encourages the patient to practice techniques that are grounded in present moment reality. A variety of psychological questionnaires were given to the subjects throughout the study in order to gauge their relative levels of anxiety. The findings indicated that, as compared to their educational counterparts, the individuals enrolled in the meditation program saw decreased levels of anxiety after the eight-week program[4]. This finding is vital to the treatment of depression/anxiety because it shows that the most effective treatment plans involve much more than psychoeducation about the disorder.

Some individuals might respond more positively to a meditative program that facilitates physicality, as well, in which case yoga is an excellent option. Yoga is a general term that refers to breathing, postures, meditation, and strength exercises.[5] Many studies indicate that yoga is favorable in combination with psychosocial or pharmacotherapy,[6] is an appropriate and effective approach for motivated individuals, and is widely available in residential areas.

Some practitioners may be reluctant to encourage their patients to engage in meditation practice (including yoga) because many deem it as something that is outside the confines of medicine. However, research supports meditation as an effective treatment for those with depressive or anxiety disorders, showing neuroimaging changes in individuals who meditate regularly. The amygdala is a brain region involved with emotional processing and attention as it relates to emotion. Past studies have established that amygdala function is impaired in individuals who suffer from a range of psychiatric disorders, including anxiety and depression.[7] A 2012 study by Desbordes et al.[8] evaluated the effects of mindful-attention and compassion meditation on the amygdala in subjects that underwent eight weeks of meditation training. The interesting side-note to this study is that the images were captured while these individuals were not, at that point in time, in a state of meditation. These individuals who had been trained to meditate showed decreased activation in the amygdala, a result that was not seen in the control group. Although many practitioners may have conceded that meditation could help alleviate depression or anxiety in that moment, the fact that there is functional brain changes in meditators, even when not actively meditating suggests a more pervasive improvement from this ancient practice.

Psychotherapy is a therapeutic treatment plan that involves the patient meeting one on one or in a group setting with a medical professional and working through mental disorders.[9] Psychotherapy is often used in the treatment of any mental disorder, including post-traumatic stress disorder, obsessive-compulsive disorder, or anxiety and depressive disorders. It is also used for behavioral medicine issues such as smoking cessation, weight management, and pain. One of the most common psychosocial therapies, cognitive-behavioral therapy (CBT), focuses on correcting distorted thinking (the "C" in CBT) and behavioral ("B") techniques such as

Table 1
Treatment options and in-office actions to take when referring a patient for a particular treatment plan

Psychotherapy	Good For	In-office Actions to Take	How to Refer
Therapy in general	Cognitively intact, motivated patients with resources to attend therapy. Appropriate as 1st-line treatment especially for patients unwilling to take or intolerant of antidepressant medication.	Avoid sedatives that may interfere with therapy	Get to know therapists in your area whom you trust to refer. For example, in the St. Louis area, both Clayton Behavioral (www.claytonbehavioral.com) and St. Louis Behavioral Medicine Institute (www.slbmi.com) have a number of excellent psychotherapy providers.
Cognitive-Behavioral Therapy: Includes exposure exercises, relaxation training, and cognitive restructuring	Patients with anxiety disorders who have avoidance behavior (e.g., post-traumatic stress disorder, social anxiety disorder, panic disorder, phobias). Also helpful for a variety of other psychiatric disorders, although not necessarily more effective than other types of psychotherapy.	Avoid benzodiazepines which interfere with cognitive-behavioral therapy	Learn about therapists in your community, try ADAA and ABCT web sites for providers
Self-help			
Books	Very effective yet underutilized approach for all patients who read and would benefit from the additional information. Can be a 1st-line treatment for patients with milder symptoms, or who are seeking "stress reduction" rather than treatment for an illness per se.	Direct patients towards specific book or author selections.	See Table 3 or try "anxiety self-help" or "depression self-help" on amazon.com
Internet/apps	Patients who are technologically savvy and open to using the internet or phone apps as part of their education and treatment	Point out specific internet resources (e.g., *NIMH. ADAA, NAMI). Other technologies such as phone apps are changing rapidly and may benefit from "vetting" by specialty organizations like ADAA.	n/a
Mind-body			
MBSR/meditation	Patients interested in mindfulness or meditation approaches or who already use them; cognitively intact, motivated patients with resources to attend.	Tell patients that mindfulness instruction (including meditation classes such as *MBSR) are helpful for anxiety, depression, and chronic pain. Avoid sedatives that may interfere with therapy.	Mindfulness/meditation resources are not readily familiar to physicians and cannot always be easily found on the internet. Local wellness resources (e.g., via employers) may be a good start.
Yoga	Patients interested in yoga; cognitively intact, motivated. May be useful 1st line treatment for mildly symptomatic individuals.	Indicate that yoga techniques can be helpful for anxiety, depression, and chronic pain.	Widely available – almost any community, fitness, or wellness center offers yoga classes.
Miscellaneous			
Exercise	Older patients, especially those not already exercising.	Point out the benefits for health, depression, anxiety, and cognitive functioning. A specifically worded recommendation to initiate exercise from a physician can often be a strong spur for ambivalent patients.	Exercise classes, or informal exercise (e.g., regular walks with spouse).
Sleep Hygiene	Patients with insomnia.	Provide basic sleep hygiene tips: regular sleep and wake schedule, limited time in bed, avoid naps	(1) CBT therapists can carry out more formal therapy for insomnia. (2) Sleep medicine referral for more extensive sleep-related problems than insomnia (e.g., suspected sleep apnea, periodic limb movement disorder, restless legs syndrome, or narcolepsy).
Alcohol/drug cessation	Patients using (even not abusing) alcohol or illicit drugs.	Indicate that even "moderate" alcohol (or substance) use can affect the brain in ways that make it harder to get out of depression or an anxiety disorder.	Alcohol or drug rehabilitation services for patients who cannot stop in spite of your recommendation to do so.
Light Therapy	Patients with a seasonal component to their depression.	Recommend light-box (bright light therapy), or increase naturalistic light exposure. Give specific written instructions. Consider suggesting a chronotherapy self-help books.	Psychiatrist or psychologist can give more extensive chronotherapy recommendations.

*National Institute of Mental Health, Anxiety and Depression Association of America, National Alliance on Mental Illness, Mindfulness--Based Stress Reduction

Table 2
Appropriate Psychotherapy Referrals
When to suggest psychosocial approaches in lieu of medication, with medication, and contraindications to treatment options.

In lieu of medication:
- Mild symptoms, consider self-help or group-based therapy
- Prefers not to take medication
- Alternative to benzodiazepine or sedative prescription
- Rare intolerance or elevated risk with medication

In combination with medication:
- Psychosocial treatment first; in cases where medication need is unclear
- Start both at once (highly motivated patients)

Contraindications for alternatives to pharmacotherapy:
- Cognitive impairments
- Active drug or alcohol abuse
- Psychotic
- Suicidal
- Therapy unavailable in nearby area
- Therapy is unaffordable

behavioral activation (for depression) and relaxation and/or exposure[10] (for anxiety, fear, and avoidance). A growing number of psychotherapy treatments are transdiagnostic in that they are widely applicable to many different psychological disorders. In fact, transdiagnostic CBT has been shown to be as effective as traditional relaxation training in reducing symptoms of anxiety and depression.[10] Although there are many different avenues to take when choosing which form of psychotherapy is ideal for a patient skilled therapists will use multiple approaches including CBT and MBCT.

Self-Help and Home-Based Approaches

Although generally not recommended as sole treatment for individuals with clinical anxiety or depressive disorders, a wide variety of self-help techniques have been proven efficient for those with subclinical levels of anxiety or depression, and as adjuncts to treatment for clinical level symptoms. Something as simple as listening to music or singing is effective for short-term relief from depressive symptoms, whereas other methods including bibliotherapy, computerized CBT interventions (preferably involving a trained professional), relaxation training, and light therapy (most useful for seasonal affective disorder) have shown efficacy to reduce symptoms, often in a sustainable manner.[11]

There is also evidence that therapy over the Internet is an effective means of treatment for those who struggle with depression. For instance, individuals who completed a 10-week online psychodynamic therapy treatment improved significantly more than counterparts who received a control condition: a class to educate themselves on depression.[12] Patients involved in another study were exposed to 15 months of psychodynamic therapy, albeit in person, and had significant changes in three areas of the brain known to be responsible for emotional regulation, and emotional processing.[7] Evidence suggests that this would be the case with web-based therapy since it has efficacy similar to face-to-face therapy.[13]

The most positive aspect about home-based therapies over the phone[14] or Internet is their reach; people are more likely to initiate and continue the treatment if they do not have to travel to do so. Ideally, treatment plans would be followed exactly as instructed by every patient, but many do not have therapy sessions once a week. These individuals often do not adhere to a full course of in-person therapy (often 12 or more sessions), or even begin in the first place, because they do not have the motivation or resources to go to a therapist's office. A study by Mohr et al. showed that individuals could effectively be treated over the phone using CBT and that their treatment results did not vary significantly from those undergoing CBT in a face-to-face environment in the short-term. Only 20.9% of participants discontinued the phone-based CBT treatment as compared to 32.7% that discontinued the face-to-face treatment.[15]

In more severely affected patients (those with major depression or a current anxiety disorder), self-help and home-based therapies should be looked at as an adjunct or as a preliminary step leading to therapy and/or pharmacotherapy. Many websites, books, podcasts, and other forms of media exist for self-help purposes (See Table 3). Often overlooked, these low-cost, easily accessed therapies ought to be considered first-line in patients with symptoms too mild to likely benefit from medication. Many healthcare practitioners have a negative view on self-help books (bibliotherapy), perhaps conjuring up images of an overly self-focused patient jumping on the latest fad. While this may be true of some self-help books, there are also many that are well-written and well-grounded in evidence-based medicine. The term "bibliotherapy" is now used in psychotherapy research circles to indicate that self-help books have an important role in treatment of depression, anxiety disorders, and other conditions, especially because of their low cost and easy accessibility.[16]

Exercise

A walk around the block to improve one's mood may seem cliché to some, but physical activity has been proven to elicit anxiolytic and antidepressant effects.[17] Biological pathways activated by exercise include increased central norepinephrine transmission, serotonin synthesis, metabolism and *beta*-endorphins, and increased neurogenesis and synaptic plasticity in key brain regions involved in mood/anxiety. Additional psychological benefits include increased

self-efficacy and behavioral activation. There is not an all-encompassing exercise regimen for therapeutic administration to treat anxiety and depressive disorders in a clinical setting. It is generally recommended that a patient exercise at least three to four times per week for 20-30 minutes[18] and that moderate activity, such as walking, is just as effective as strenuous activities like running.[19] Probably most important in a recommendation is that the patient find a physical activity that they enjoy doing and are likely to maintain.

Sleep Hygiene

Sleep is an aspect of daily life that might be overlooked when dealing with a depressed or anxious patient, but sleep has an important effect on physical and emotional health. Many depressed or anxious individuals will present with insomnia as a chief or major complaint. Poor sleep hygiene can exacerbate insomnia and other types of disturbances leading to restless sleep.[20] Additionally, individuals who have proper sleep hygiene are shown to have better physical health and lower levels of anxiety and depression.[21] Poor sleep hygiene includes one or more of these features:

1. improper sleep scheduling
2. the use of sleep-disturbing products (caffeinated foods/beverages)
3. engaging in activating (watching television) or arousing activities close to bedtime
4. the use of the bed for activities other than sleep, and
5. maintaining an uncomfortable sleeping environment.[21]

Factors that are known to affect quality of sleep include drinking caffeinated beverages before bedtime, worrying or planning about important things while lying in bed, and watching television in bed.

Counseling an individual about their sleep hygiene should first aim to determine their physical and emotional status. Following, the particulars of their insomnia should be clarified (how often do they struggle with insomnia, how long has it been going on, etc.).[22] In order to properly treat the patient, it is vital to determine whether their anxiety/depression is primary or secondary to their insomnia. If insomnia is primary to anxiety/depression the individual should see improved disposition after rectifying their quality of sleep. Should the patient engage in any of the features of poor sleep hygiene they should be encouraged to alter their behaviors in order to improve their quality of sleep.

Cognitive-behavioral therapy (CBT) is an appropriate and effective treatment plan for individuals who suffer from primary insomnia as well as depression or anxiety. Two psychosocial treatments, both administered in CBT for insomnia, are sleep restriction and combating cognitive arousal. A systemic review indicated that the use of CBT (including sleep restriction and stimulus control) produced positive changes in individuals suffering from depression or anxiety and was more efficacious than other treatment options including pharmacotherapy (benzodiazepines; to be discussed later).[22] Given the wide availability of CBT for insomnia and its relative safety (especially compared to sedatives in older adults) this is likely an underutilized treatment.

Table 3
Resources for Patients Suffering from Anxiety and/or Depression

Books
1. Williams, Mark, and Danny Penman. Mindfulness: An Eight-week Plan for Finding Peace in a Frantic World. Emmaus, PA: Rodale, 2011. (288 pages, kindle edition, audiobook)
2. Kabat-Zinn, Jon. Mindfulness for Beginners: Reclaiming the Present Moment--and Your Life. Boulder, CO: Sounds True, 2012. (120 pages, kindle edition, audiobook)
3. Davis, Martha, Elizabeth Robbins. Eshelman, and Matthew McKay. The Relaxation & Stress Reduction Workbook. Oakland, CA: New Harbinger Publications, 2000. (392 pages, kindle edition)
4. Burns, David D. The Feeling Good Handbook. New York, N.Y., U.S.A.: Plume, 1999. (768 pages)
5. Orsillo, Susan M., and Lizabeth Roemer. The Mindful Way through Anxiety: Break Free from Chronic Worry and Reclaim Your Life. New York: Guilford, 2011. (307 pages, kindle edition)
6. Ilardi, Stephen S. The Depression Cure: The 6-step Program to Beat Depression without Drugs. Cambridge, MA: Da Capo Lifelong, 2009. (Therapeutic lifestyle book, 304 pages, kindle edition, audiobook)
7. Williams, J. Mark G. The Mindful Way through Depression: Freeing Yourself from Chronic Unhappiness. New York: Guilford, 2007. (273 pages, kindle edition with video/audio, audiobook)
8. Knaus, William J. The Cognitive Behavioral Workbook for Depression: A Step-by-step Program. Oakland, CA: New Harbinger Publications, 2006. (336 pages, kindle edition)
9. Benson, Herbert. The Relaxation Response. New York: Morrow, 1975. (240 pages, kindle edition)

Apps (iPhone)
1. MyThoughts+
2. LiveHappy
3. iStress
4. Gratitude Journal
5. The Habit Factor

Apps (Android)
1. DBT Self-help
2. Stop Panic and Anxiety
3. Worry Box
4. Depression CBT Self-Help Guide
5. Anxiety

Websites
1. www.selfhelpzone.com
2. www.abct.org
3. www.relatedness.org
4. www.adaa.org/understanding-anxiety/depression
5. www.anxietybc.com
6. www.get.gg/anxiety.htm
7. www.helpguide.org/mental/depression_tips.htm
8. www.helpguide.org/mental/anxiety_self_help.htm
9. www.mindfullivingprograms.com/whatMBSR.php

Pleasant Activity Scheduling

For many Americans, making it a point to simply *enjoy* themselves is not on their radar. Scheduling pleasant activities is an effective tool for reducing and preventing depression and anxiety, particularly in older adults who tend to be more sedentary and isolated. There is a significant association between participating in pleasant activities and levels of depression in older adults, supporting the idea that the more active an individual is, the more likely they are to experience clinical improvement.[23] It is advisable that counseling a more isolated, depressed individual includes encouraging the patient to plan and engage in more pleasurable activities. The Pleasant Events Schedule is sometimes used by a therapist in a behavioral setting and is effective in treating depressed adults while helping them to participate in more enjoyable activities.[24] This schedule is a weekly map of when the patient will engage in an activity that they find enjoyable in order for them to have something to look forward to and have a concrete idea of when that event will occur (reducing anxiety).

Psychotherapy & Pharmacotherapy in Combination

Pharmacotherapy, although widely used as the primary method of treatment for anxiety and depressive disorders, is often not as advantageous alone as when combined with psychotherapy (including cognitive-behavioral therapy, mindfulness-based therapy, interpersonal therapy, psychodynamic therapy, and supportive therapy). Peeters et al. found that individuals with Major Depressive Disorder (MDD) being treated with CBT saw their symptoms decrease at a faster rate than if combined with antidepressant treatment.[1] Similarly, a meta-analysis by Chiesa et al. supports the idea that psychotherapy acts in adjunct to antidepressant therapy and even found that psychotherapy, in this case mindfulness-based cognitive therapy (MBCT), along with the gradual removal of antidepressant treatment showed no significant difference from the continuation of antidepressant treatment.[25] While medication cannot be replaced in some cases that have reached clinical levels, CBT and other therapies are appropriate stand-alone therapies if an individual is reluctant to take medication, or has subclinical depression or anxiety.

Psychotherapy likely has an additive, not synergistic, interaction with pharmacotherapy, in that psychotherapy in combination with pharmacotherapy is more effective than either treatment alone. A study published in the New England Journal of Medicine randomly assigned 681 adults with a nonpsychotic major depressive disorder to one of three groups. The first group received a 12-week medication regimen, the second group participated in CBT (16-20 sessions), and the third group did both. Among the 519 subjects that completed the study, the rate of remission was 55% in the medication treated group, 52% in the CBT group, and 85% in the combined group.[26] Although pharmacotherapy is often more effective for clinical depression and anxiety in combination with psychotherapy, psychotherapy is often underutilized.

Many patients' depression or anxiety is exacerbated by prescription medications or illicit drug and/or alcohol abuse. Benzodiazepines and other sedatives can interfere with psychotherapy approaches, and are contraindicated in patients receiving exposure therapy because they interfere with learning and memory. Their use should be monitored closely because of their addictive nature[27], and risks in older adults (falls, cognitive impairments). Those who abuse alcohol regularly also experience higher levels of depressive symptoms than those who do not. Logically then, individuals who are treated with benzodiazepines and continue to use alcohol experience excessive mood and sedation disturbances[28] that can greatly hinder their treatment and block the possible therapeutic advances psychotherapy might have had without these CNS depressant drugs.[7] Depressed individuals using alcohol, despite knowledge of the issues caused by alcohol abuse, should be encouraged to cease use, and if their use persists they should be referred to an alcohol rehabilitation center.

Actions for a Primary Care Practitioner to Take to Ensure Patients Receive Proper Psychosocial Treatments

The above information was meant to serve as a broad knowledge base, covering different treatment options for anxiety and depression. However, actions to take in a primary care setting can be distilled into five simple steps:

Assess: each patient's symptomatology (focusing on how much problems they have with depression, anxiety, and related problems such as insomnia, chronic pain, and/or excessive drinking or drug use; and whether the level of symptomatology is mild, vs. clinical-level).

Recommend: self-help opportunities and therapeutic lifestyle changes (See Tables 1 and 3).

Refer: for psychotherapy, meditationv, or other mental health specialty care (See Table 2).

(Don't) Interfere: avoid benzodiazepines and other sedatives as these interfere with psychotherapy and other psychosocial approaches.

Follow-Up: on your recommendations and referrals; did they do them? Did it help? What are barriers if any? Always reinforce the positive actions they've taken.

Conclusion

For most patients with depression or anxiety disorders, treating with medication alone is an extremely limited treatment plan. Though pharmacotherapy in the form of antidepressants or anxiolytics is often used to treat anxiety and depressive disorders, there is significant research suggesting that this, in many clinical cases, is not enough for individuals to experience remission and may be unnecessary in more mild cases. Psychotherapy treatments like CBT and psychodynamic therapy along with techniques that classically fall under the "alternative medicine" umbrella such as meditation, MBSR, and yoga all have positive results as monotherapy or in combination with pharmacotherapy. Additionally, simple solutions that individuals struggling with subclinical depression or anxiety can apply to their daily life such as proper sleep hygiene, exercise, and self-help techniques (books, internet sites, phone apps) are an effective means of reducing anxiety or depression, as an adjunct to other therapies or as a first step for mild (subclinical) cases. In order to treat patients and help alleviate their symptoms and impairments, it is imperative that all treatment avenues are considered and weighed for their positive effects.

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Disclosure

None reported.

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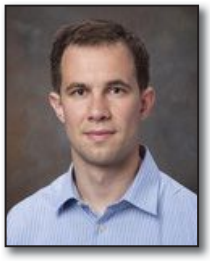
More Reasons States Should Not Legalize Marijuana



Medical and Recreational Marijuana: Commentary and Review of the Literature

by Samuel T. Wilkinson, MD

Marijuana should undergo the same rigorous approval process as other medications prescribed by physicians, including randomized, placebo- and active-controlled trials to evaluate safety and efficacy, not by popular vote or state legislature.



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Abstract

Recent years have seen substantial shifts in cultural attitudes towards marijuana for medical and recreational use. Potential problems with the approval, production, dispensation, route of administration, and negative health effects of medical and recreational marijuana are reviewed. Medical marijuana should be subject to the same rigorous approval process as other medications prescribed by physicians. Legalizing recreational marijuana may have negative public health effects.

Introduction

Recent years have seen a cultural shift in attitudes towards marijuana. At the time of this writing, medical marijuana is legal in 20 states and the District of Columbia; recreational marijuana is now legal in Washington and Colorado. A substantial and growing literature documents legalized marijuana may have adverse effects on individual and public health.

Medical Use of Marijuana

The term 'medical marijuana' implies that marijuana is like any other medication prescribed by a physician. Yet the ways in which medical marijuana has been approved, prescribed, and made available to the public are very different from other commercially available prescription drugs. These differences

pose problems unrecognized by the public and by many physicians.

Lack of Evidence for Therapeutic Benefit

In the United States, commercially available drugs are subject to rigorous clinical trials to evaluate safety and efficacy. Data appraising the effectiveness of marijuana in conditions such as HIV/AIDS, epilepsy, and chemotherapy-associated vomiting is limited and often only anecdotal.[1,2] To date, there has been only one randomized, double-blind, placebo- and active-controlled trial evaluating the efficacy of smoked marijuana for any of its potential indications, which showed that marijuana was superior to placebo but inferior to Ondansetron in treating nausea.[3] Recent reviews by the Cochrane Collaboration find insufficient evidence to support the use of smoked marijuana for a number of potential indications, including pain related to rheumatoid arthritis,[4] dementia,[5] ataxia or tremor in multiple sclerosis,[6] and cachexia and other symptoms in HIV/AIDS.[2] This does not mean, of course, that components of marijuana do not have potential therapeutic effects to alleviate onerous symptoms of these diseases; but, given the unfavorable side effect profile of marijuana, the evidence to justify use in these conditions is still lacking.

Contamination, Concentration & Route of Administration

Unlike any other prescription drug used for medical purposes, marijuana is not subject to central regulatory oversight. It is grown in dispensaries, which, depending on the state, have regulatory standards ranging from strict to almost non-existent. The crude marijuana plant and its products may be contaminated with fungus or mold.[7] This is especially problematic for immunocompromised patients,[8] including those with HIV/AIDS or cancer.[9] Furthermore, crude marijuana contains over 60 active cannabinoids,[10] few of which are well studied. Marijuana growers often breed their plants to alter the concentrations of different chemicals compounds. For instance, the concentration of tetrahydrocannabinol (THC), the principal psychoactive ingredient, is more than 20-fold more than in marijuana products used several decades ago. Without rigorous clinical trials, we have no way of knowing which combinations of cannabinoids may be therapeutic and which may be deleterious. As marijuana dispensaries experiment by breeding out different cannabinoids in order to increase the potency of THC, there may be unanticipated negative and lasting effects for individuals who smoke these strains.

Marijuana is the only 'medication' that is smoked, and, while still incompletely understood, there are legitimate concerns about long-term effects of marijuana smoke on the lungs.[11,12] Compared with cigarette smoke, marijuana smoke can result in three times the amount of inhaled tar and four times the amount of inhaled carbon-monoxide.[13] Further, smoking marijuana has been shown to be a risk factor for lung cancer in many[14,15] but not all[16] studies.

High Potential for Diversion

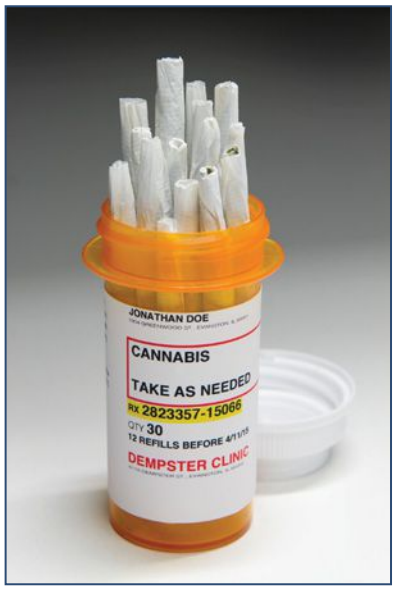
In some states, patients are permitted to grow their own marijuana. In addition to contributing to problems such as contamination and concentration as discussed above, this practice also invites drug diversion. Patients seeking to benefit financially may bypass local regulations of production and sell home-grown marijuana at prices lower than dispensaries. We do not allow patient to grow their own opium for treatment of chronic pain; the derivatives of opium, like marijuana, are highly addictive and thus stringently regulated.

Widespread "Off-label" Use

FDA-approved forms of THC (Dronabinol) and a THC-analog (Nabilone), both available orally, already exist. Indications for these drugs are HIV/AIDS cachexia and chemotherapy-associated nausea and vomiting. Unlike smoked, crude marijuana, these medications have been subject to randomized, placebo-controlled, clinical trials. Yet despite these limited indications where marijuana compounds have a proven but modest effect in high-quality clinical trials, medical marijuana is used overwhelmingly for non-specific pain or muscle spasms. Recent data from Colorado show that 94% of patients with medical marijuana cards received them for treatment of "severe pain."[17] Similar trends are evident in California.[18] Evidence for the benefit of marijuana in neuropathic pain is seen in many[19-21] but not all[22] clinical trials. There is no high-quality evidence, however, that the drug reduces non-neuropathic pain; this remains an indication for which data sufficient to justify the risks of medical marijuana is lacking.[4, 23-25]

If marijuana is to be 'prescribed' by physicians and used as a medication, it should be subject to the same rigorous approval process that other commercially available drugs undergo. Potentially therapeutic components of marijuana should be investigated, but they should only be made available to the public after adequately powered, double-blind, placebo-controlled trials have demonstrated efficacy and acceptable safety profiles. Furthermore, these compounds should be administered in a way that poses

less risk than smoking and dispensed via standardized and FDA-regulated pharmacies to ensure purity and concentration. Bypassing the FDA and approving 'medicine' at the ballot box sets a dangerous precedent. Physicians should be discouraged from recommending medical marijuana. Alternatively, consideration can be given to prescribing FDA-approved medicines (Dronabinol or Cesamet) as the purity and concentration of these drugs are assured and their efficacy and side effect profiles have been well documented in rigorous clinical trials.



There is some evidence that compounds naturally found in marijuana have therapeutic benefit for symptoms of diseases such as HIV/AIDS, multiple sclerosis, and cancer. If these compounds are to be used under the auspices of 'medical marijuana,' they should undergo the same rigorous approval process that other medications prescribed by physicians, including randomized, placebo- and active-controlled trials to evaluate safety and efficacy, not by popular vote or state legislature.

Recreational Marijuana

The question of recreational marijuana is a broader social policy consideration involving implications of the effects of legalization on international drug cartels, domestic criminal justice policy, and federal and state tax revenue in addition to public health. Yet physicians, with a responsibility for public health, are experts with a vested interest in this issue. Recent legislation, reflecting changes in the public's attitudes towards marijuana, has permitted the recreational use of marijuana in Colorado and Washington. Unfortunately, the negative health consequences of the drug are not prominent in the debate over legalizing marijuana for recreational use. In many cases, these negative effects are more pronounced in adolescents. A compelling argument, based on these negative health effects in both adolescents and adults, can be made to abort the direction society is moving with regards to the legalization of recreational marijuana.

Myth: Marijuana is Not Addictive

A growing myth among the public is that marijuana is not an addictive substance. Data clearly show that about 10% of those who use cannabis become addicted; this number is higher among adolescents.[26] Users who seek treatment for marijuana addiction average 10 years of daily use.[27] A withdrawal syndrome has been described, consisting of anxiety, restlessness, insomnia, depression, and changes in appetite[28] and affects as many as 44% of frequent users,[29] contributing to the addictive potential of the drug. This addictive potential may be less than that of opiates; but the belief, especially among adolescents, that the drug is not addictive is misguided.

Schizophrenia and Other Psychotic Disorders

Marijuana has been consistently shown to be a risk factor for schizophrenia and other psychotic disorders.[30-32] The association between marijuana and schizophrenia fulfills many, but not all, of the standard criteria for the epidemiological establishment of causation, including experimental evidence,[33,34] temporal relationship,[35-38] biological gradient,[30,31,39] and biological plausibility.[40] Genetic variation may explain why marijuana use does not strongly fulfill remaining criteria, such as strength of association and specificity.[41,42] As these genetic variants are explored and further characterized, marijuana use may be shown to cause or precipitate schizophrenia in a genetically vulnerable population. The risk of psychotic disorder is more pronounced when marijuana is used at an earlier age.[32, 43]

Effects on Cognition

Early studies suggested cognitive declines associated with marijuana (especially early and heavy use); these declines persisted long after the period of acute cannabis intoxication.[44-46] Recently, Meier and colleagues analyzed data from a prospective study which followed subjects from birth to age 38; their findings yielded supportive evidence that cannabis use, when begun during adolescence, was associated with cognitive impairment in multiple areas, including executive functioning, processing speed, memory, perceptual reasoning, and verbal comprehension.[47] Rogeberg[48] criticized the study's methodology, claiming that the results were confounded by differences in socioeconomic status; this claim, however, was based on sub-analyses that used very small numbers. Additional sub-analyses[49] of the original study cohort showed that marijuana was just as prevalent in populations of higher

socioeconomic status, suggesting that socioeconomic status was not a confounding variable. Any epidemiological study is subject to confounding biases and future research will be needed to clarify and quantify the relationship between cognitive decline and adolescent marijuana use. However, the findings of the original study by Meier et al show there is indeed an independent relationship between loss of intelligence and adolescent marijuana use. This finding, moreover, is consistent with prior studies.[44]

Other Negative Health Effects

Substantial evidence exists suggesting that marijuana is harmful to the respiratory system. It is associated with symptoms of obstructive and inflammatory lung disease,[11,50] an increased risk of lung cancer,[14,15] and it is suspected to be associated with reduced pulmonary function in heavy users.[51] Further, its use has been associated with harmful effects to other organ systems, including the reproductive,[52] gastrointestinal,[53] and immunologic[10, 54] systems.

Social Safety Implications: Effects on Driving

Marijuana impairs the ability to judge time, distance, and speed; it slows reaction time and reduces ability to track moving objects.[55,56] In many studies of drug-related motor vehicle fatalities, marijuana is the most common drug detected except for alcohol.[57,58] Based on post-mortem studies, Couch et al determined that marijuana was likely an impairing factor in as many fatal accidents as alcohol.[59] One study showed that in motor vehicle accidents where the driver was killed, recent marijuana use was detected in 12% of cases.[57] Other research confirms a significantly increased risk of motor vehicle fatalities in association with acute cannabis intoxication.[60]

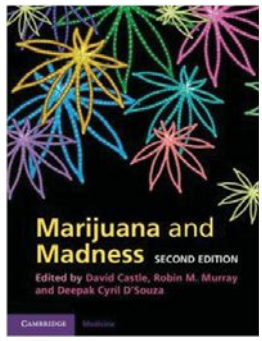
Risk Perception and Use in Adolescents

Marijuana use among adolescents has been increasing. Data that has tracked risk perception and use of marijuana among adolescents over decades clearly shows an inverse relationship; as adolescent risk perception wanes, marijuana use increases.[61] As more states legalize medical and recreational marijuana, risk perception is expected to decrease, causing the prevalence of use among adolescent to continue to rise. This is among the most concerning of issues about the drug's legalization because so many of the negative effects of marijuana—including cognitive impairment and risk for short- and long-term psychosis—are heightened when used during adolescence.

BOOK REVIEW

Marijuana and Madness

Editors: David Castle, Robin M. Murray, Deepak Cyril D'Souza



A comprehensive overview of the psychiatry and neuroscience of Cannabis sativa (marijuana). It outlines the latest developments in understanding the human cannabinoid system, and links this knowledge to clinical and epidemiological facts about the impact of cannabis on mental health. Clinically focused chapters review not only the direct psychomimetic properties of cannabis, but also the impact consumption has on the courses of evolving or established mental illnesses such as schizophrenia. Effects of cannabis on mood are reviewed, as are its effects on cognition.

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Conclusion

There is some evidence that compounds naturally found in marijuana have therapeutic benefit for symptoms of diseases such as HIV/AIDS, multiple sclerosis, and cancer. If these compounds are to be used under the auspices of 'medical marijuana,' they should undergo the same rigorous approval process that other medications prescribed by physicians, including randomized, placebo- and active-controlled trials to evaluate safety and efficacy, not by popular vote or state legislature. Furthermore, these therapeutic compounds should be administered via a route that minimizes long-term health risk (i.e., via oral pill) and should be dispensed by centrally regulated pharmacies to ensure the purity and concentration of the drug and allow for the recall of contaminated batches.

Marijuana for recreational use will have many adverse health effects. The drug is addictive, with mounting evidence for the existence of a withdrawal syndrome. Furthermore, it has been shown to have adverse effects on mental health, intelligence (including irreversible declines in cognition), and the respiratory system. Driving while acutely intoxicated with marijuana greatly increases the risk of fatal motor vehicle collision. Legalization for recreational use may have theoretical (but still unproven) beneficial social effects regarding issues such as domestic criminal justice policy, but these effects will not come without substantial public health and social costs. Currently there is a lack of resources devoted to educating physicians about this most commonly used illicit substance. The potential

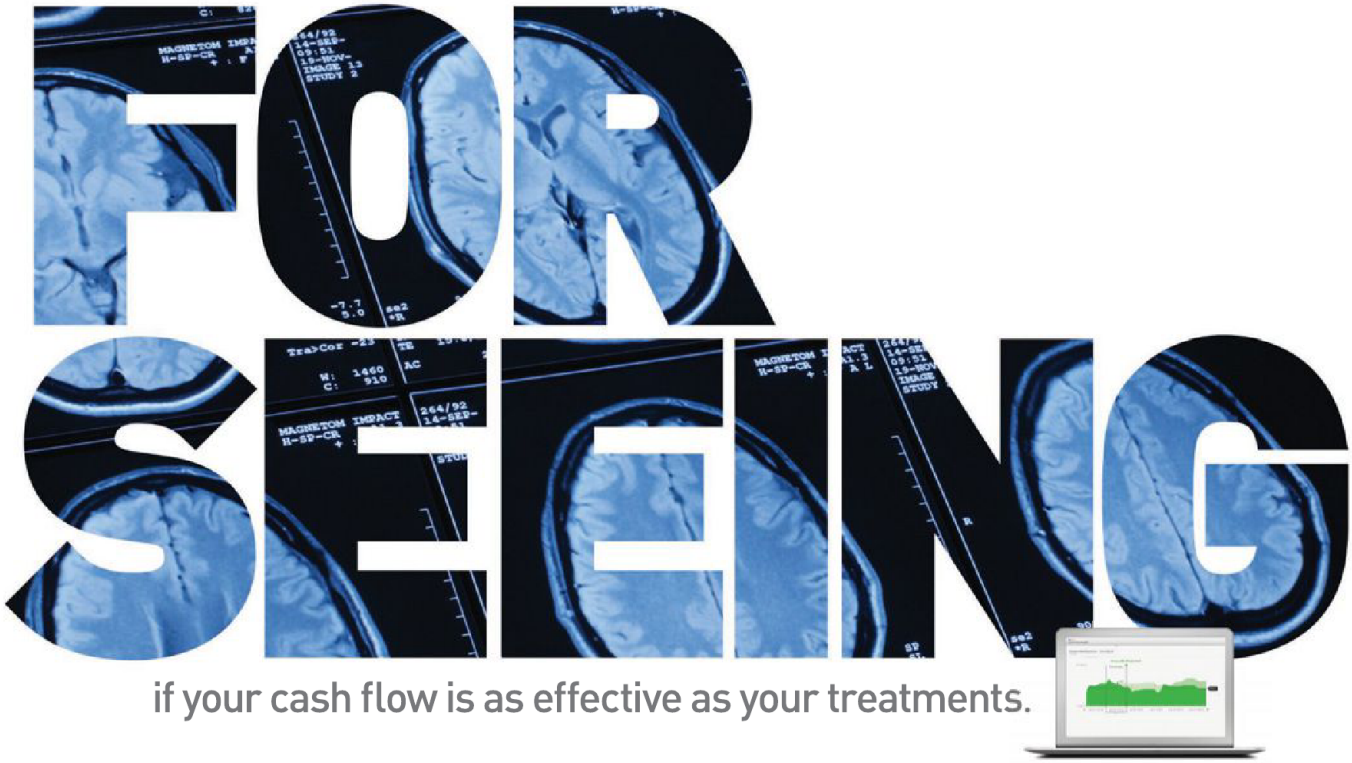
benefits and significant risks associated with marijuana use should be taught in medical schools and residency programs throughout the country.

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Disclosure

None reported.



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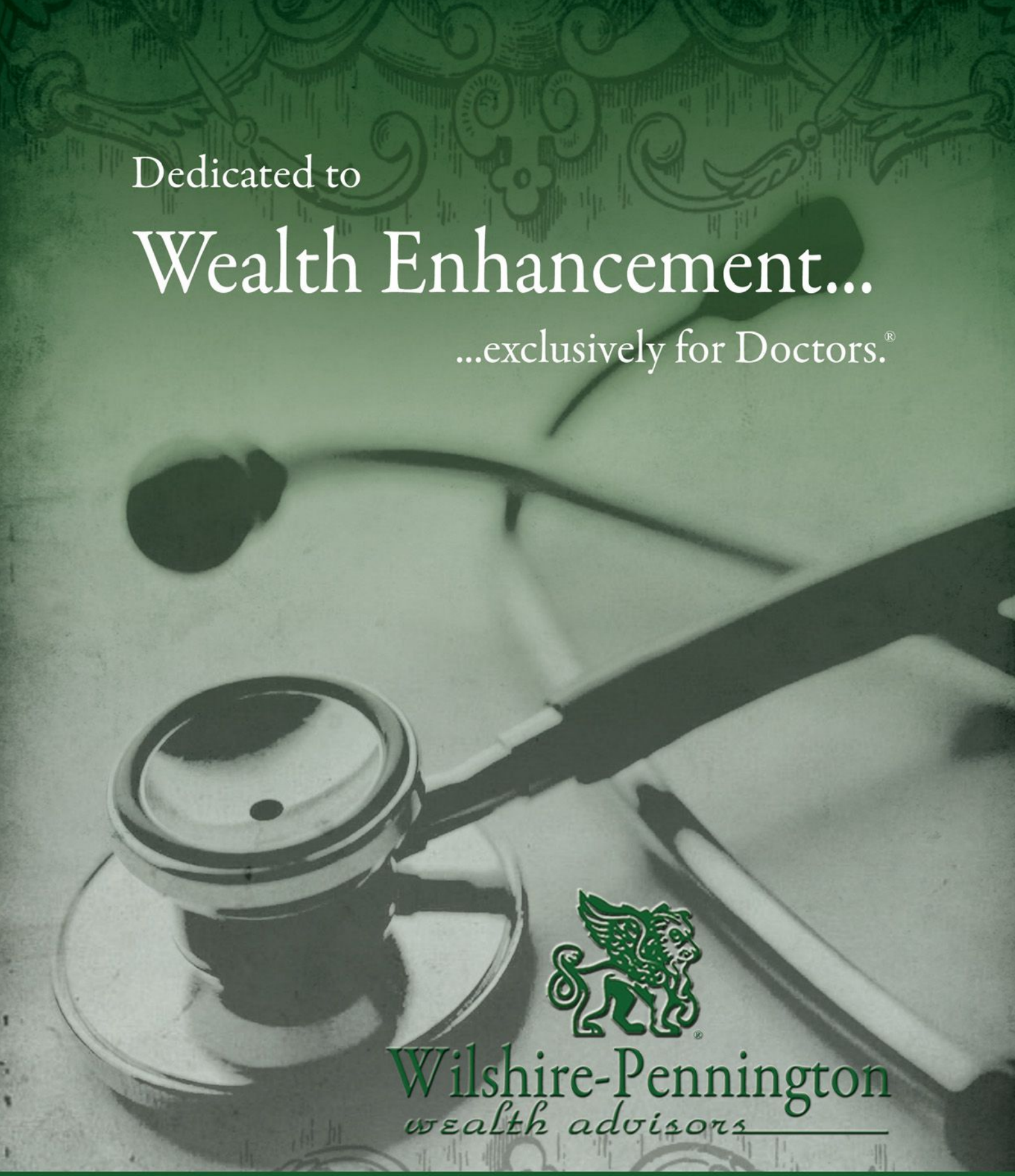
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